


10/541787                      Examiner: LANGEL, WAYNE                      GAU: 1793  
Classification: 071/032.000                      Inventor: JOSEF , ALEXANDER, et al  
Status: 30 - DOCKETED NEW CASE - READY FOR EXAMINATION  
Title: SOLUBLE FERTILIZER COMPOSITIONS COMPRISING CALCIUM AND/OR MAGNESIUM PHOSPHATES

Bib Data report

**Application Title:** SOLUBLE FERTILIZER COMPOSITIONS COMPRISING  
CALCIUM AND/OR MAGNESIUM PHOSPHATES

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07/25/2008

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**Independent Claims:** 3

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Last name, First name:	City:	Country or State:	
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TUBOV SHULA	ARAD	ISRAEL	
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**Attorneys:** ALL                      **Attorney Docket No:** 0-05-111

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/063126 A1

(54) Title: SOLUBLE FERTILIZER COMPOSITIONS COMPRISING CALCIUM AND/OR MAGNESIUM PHOSPHATES

(57) Abstract: The present invention provides fertilizer compositions comprising calcium and magnesium phosphates together with alkali metal double phosphates, and process for their preparation. The solid composition is freely flowing and well soluble

=> FILE REG

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=> DISPLAY HISTORY FULL L1-

FILE 'HCA' ENTERED AT 14:31:23 ON 24 FEB 2010

L1 15806 SEA JOSEF ?/AU OR ALEXANDER ?/AU  
 L2 15 SEA TUBOV ?/AU OR SHULA ?/AU  
 L3 2201 SEA ZUKERMAN ?/AU OR ZUKERMANN ?/AU OR ZUCKERMAN ?/AU OR  
 ZUCKERMANN ?/AU OR ITSHAK ?/AU  
 L4 0 SEA L1 AND L2 AND L3  
 L5 2 SEA L1 AND L2  
 L6 3 SEA L1 AND L3  
 L7 0 SEA L2 AND L3  
 L8 5 SEA L5 OR L6  
 SEL L8 3 RN

FILE 'REGISTRY' ENTERED AT 14:35:01 ON 24 FEB 2010

L9 4 SEA (7664-38-2/BI OR 7757-86-0/BI OR 7757-93-9/BI OR  
 E MONOCALCIUM DIHYDROGEN PHOSPHATE/CN  
 L10 1 SEA "MONOCALCIUM DIHYDROGEN PHOSPHATE"/CN  
 SEL L9 2 RN  
 L11 1 SEA 7757-93-9/BI  
 L12 2 SEA L10 OR L11  
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 L13 1 SEA "MONOMAGNESIUM DIHYDROGEN PHOSPHATE"/CN  
 SEL L9 3 RN  
 L14 1 SEA 7757-86-0/BI  
 L15 2 SEA L13 OR L14  
 SEL L9 4 RN  
 L16 1 SEA 7664-38-2/BI  
 SEL L9 1 RN  
 L17 1 SEA 7778-77-0/BI  
 E PHOSPHORIC ACID, POTASSIUM SALT/CN  
 L18 8 SEA "PHOSPHORIC ACID, POTASSIUM SALT (1:2)"/CN OR "PHOSPHOR  
 IC ACID, POTASSIUM SALT (1:3)"/CN OR "PHOSPHORIC ACID,  
 POTASSIUM SALT (2:3)"/CN OR "PHOSPHORIC ACID, POTASSIUM  
 SALT (2:3), DIHYDRATE"/CN OR "PHOSPHORIC ACID, POTASSIUM  
 SALT (2:3), TRIHYDRATE"/CN OR "PHOSPHORIC ACID, POTASSIUM  
 SALT (3:4)"/CN OR "PHOSPHORIC ACID, POTASSIUM SALT (3:5),  
 MONOHYDRATE"/CN OR "PHOSPHORIC ACID, POTASSIUM SALT (4:7),  
 DIHYDRATE"/CN  
 E PHOSPHORIC ACID, SODIUM SALT/CN  
 L19 19 SEA "PHOSPHORIC ACID, SODIUM SALT"/CN OR "PHOSPHORIC ACID,  
 SODIUM SALT (1:1)"/CN OR "PHOSPHORIC ACID, SODIUM SALT  
 (1:2)"/CN OR "PHOSPHORIC ACID, SODIUM SALT (1:3)"/CN OR  
 "PHOSPHORIC ACID, SODIUM SALT (1:?)"/CN OR ("PHOSPHORIC

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SALT (2:3)"/CN OR "PHOSPHORIC ACID, SODIUM SALT (2:3),  
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"PHOSPHORIC ACID, SODIUM SALT (3:1)"/CN OR "PHOSPHORIC  
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ACID, SODIUM SALT (3:5)"/CN OR "PHOSPHORIC ACID, SODIUM  
SALT (4:6), TRIHYDRATE"/CN OR "PHOSPHORIC ACID, SODIUM  
SALT (5:11)"/CN OR "PHOSPHORIC ACID, SODIUM SALT (5:9)"/CN)  
OR ("PHOSPHORIC ACID, SODIUM SALT, HYDRATE"/CN OR  
"PHOSPHORIC ACID, SODIUM SALT, HYDRATE (1:1:2)"/CN OR  
"PHOSPHORIC ACID, SODIUM SALT, HYDRATE (1:2:12)"/CN OR  
"PHOSPHORIC ACID, SODIUM SALT, HYDRATE (1:3:12)"/CN OR  
"PHOSPHORIC ACID, SODIUM SALT, HYDRATE (1:4:7)"/CN)

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E PHOSPHORIC ACID/CN  
L20 1 SEA "PHOSPHORIC ACID"/CN  
D RN  
L21 190 SEA 7664-38-2/CRN  
L22 50 SEA A1/PG AND L21  
L23 13 SEA L22 AND 2/NC

FILE 'REGISTRY' ENTERED AT 14:53:46 ON 24 FEB 2010

L24 151 SEA L22 AND 2/NC

FILE 'HCA' ENTERED AT 14:54:39 ON 24 FEB 2010

L25 12748 SEA L12  
L26 1429 SEA L15  
L27 52226 SEA L18 OR L19 OR L24  
L28 83745 SEA L16  
L29 168347 SEA (PHOSPHORIC# OR ORTHOPHOSPHORIC#) (A)ACID# OR H3PO4  
L30 153373 SEA FERTILIZER? OR FERTILISER?  
L31 410 SEA (L25 OR L26) AND L27 AND (L28 OR L29)  
L32 48 SEA L31 AND L30  
L33 QUE 19/SC,SX  
L34 40 SEA L31 AND L33  
L35 57 SEA L32 OR L34  
L36 34 SEA 1808-2003/PY,PRY,AY AND L35

FILE 'REGISTRY' ENTERED AT 15:00:40 ON 24 FEB 2010

L37 17871 SEA 7664-38-2/CRN  
L38 811 SEA L37 AND CA/ELS  
L39 476 SEA L37 AND MG/ELS  
L40 69 SEA (L38 OR L39) AND 2/NC

FILE 'HCA' ENTERED AT 15:01:27 ON 24 FEB 2010

L41 35662 SEA L40  
L42 725 SEA L41 AND L27 AND (L28 OR L29)  
L43 67 SEA L42 AND L30  
L44 58 SEA L42 AND L33  
L45 84 SEA L43 OR L44

L46 56 SEA 1808-2003/PY,PRY,AY AND L45  
L47 56 SEA L36 OR L46

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=> D L47 1-56 CBIB ABS HITSTR HITIND

L47 ANSWER 1 OF 56 HCA COPYRIGHT 2010 ACS on STN

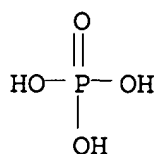
149:517752 A synergistic composition useful for making slow release high content sulphur glass. Biswas, Nisha; Dasmohapatra, Gourkrishna; Ghosh, Koushik; Kumarbasu, Samir; Chaudhuri, Ahindra Kumar (India). Indian Pat. Appl. IN 2000DE00662 A 20080725, 13pp. (English). CODEN: INXXBQ. APPLICATION: IN 2000-DE662 20000712.

AB The process of the present invention provides a high content sulfur glass capable of slow release of sulfur which particularly relates to the application of the glass as **fertilizer** for agricultural applications and for any other plant which requires sulfur as one of the constituents of their elemental combinations. The material may have applications in such other fields where controlled release of sulfur is required such as fungicide, pesticide, weedicide and for purposes other than agriculture.

IT 7664-38-2, Orthophosphoric acid, processes  
7758-87-4, Tricalcium phosphate 7778-77-0, Potassium dihydrogen orthophosphate  
(synergistic calcium potassium sulfate phosphate glass compns. useful for slow release high content sulfur glass)

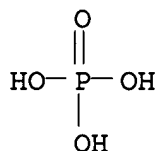
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



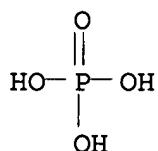
RN 7758-87-4 HCA

CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



● 3/2 Ca

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC ICM C03C003-00  
CC 57-1 (Ceramics)  
Section cross-reference(s): 19  
IT **Fertilizers**  
(slow-release; synergistic calcium potassium sulfate phosphate glass compns. useful for slow release high content sulfur glass)  
IT **Fertilizers**  
(sulfur; synergistic calcium potassium sulfate phosphate glass compns. useful for slow release high content sulfur glass)  
IT 471-34-1, Calcium carbonate, processes 584-08-7, Potassium carbonate 7646-93-7, Potassium bisulfate 7664-38-2, Orthophosphoric acid, processes 7722-76-1, Ammonium dihydrogen orthophosphate 7727-21-1, Potassium persulfate 7758-87-4, Tricalcium phosphate 7778-18-9, Calcium sulfate 7778-77-0, Potassium dihydrogen orthophosphate 7778-80-5, Potassium sulfate, processes 7783-20-2, Ammonium sulfate, processes 7783-28-0, Diammonium hydrogen orthophosphate 7784-30-7, Aluminum orthophosphate 7790-62-7, Potassium disulfate 10043-01-3, Aluminum sulfate 13397-24-5, Gypsum, processes (synergistic calcium potassium sulfate phosphate glass compns. useful for slow release high content sulfur glass)

L47 ANSWER 2 OF 56 HCA COPYRIGHT 2010 ACS on STN  
146:86578 Solid-chemical composition for the non-exothermic chemical oxidation and aerobic bioremediation of environmental contaminants.

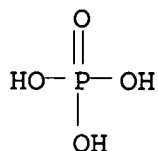
Hince, Eric Christian (USA). U.S. US 7160483 B1 20070109, 14pp.  
(English). CODEN: USXXAM. APPLICATION: US 2000-722878 20001127.

AB The main purpose of the present invention is to provide solid-chem. compns. and methods and means for their use which specifically: (1) provide for a sustained release of active oxygen and complex inorg. phosphates; and (2) create, enhance, and maintain oxidizing and aerobic conditions which favor non-exothermic, chem.-oxidn. processes and aerobic bioremediation and fungal bioremediation processes. The present invention discloses advanced solid-chem. compns. and methods for the non-exothermic chem. oxidn. and aerobic and fungal biodegrdn. of org. compds. and certain inorg. contaminants which may be present in solid and liq. wastes, sludges, leachates, acid-mine drainages, waste waters, soils, sediments, ground waters, surface waters, and other environmental media. The preferred embodiments of the disclosed solid-chem. compns. are prep'd. and used in the forms of granules, briquettes, tablets, capsules, pellets, and the like, which among other advantages, are easier to handle and apply under typical field conditions. These preferred forms of the disclosed chem. compns. can be made to disintegrate subsequent to their application and/or upon contact with water in a significant and predictable manner via relatively minor variations in their formulation and manuf. This improved functionality enables the time-dependent release profile(s) of the active-oxygen sources and other ingredients to be varied so as to optimize the remediation of contaminants based on site-specific factors or factors pertaining to the specific waste-stream, media and/or the contaminants therein. Org. contaminants which can be treated using this invention include many different types of petroleum products, and more recalcitrant contaminants such as PCBs, PAHs and pesticides can be degraded by using the disclosed compns. and methods to stimulate fungal biodegrdn. processes. This invention can also be used to treat inorg. contaminants such as the acids and metals present in acid-mine drainage (AMD).

IT 7632-05-5, Sodium phosphate 7664-38-2,  
Orthophosphoric acid, uses 10103-46-5,  
Calcium phosphate 16068-46-5, Potassium phosphate  
(solid chem. compn. for nonexothermic oxidn. and aerobic  
bioremediation of environmental contaminants)

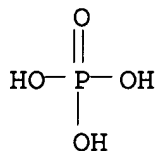
RN 7632-05-5 HCA

CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)

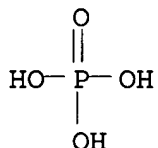


●x Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

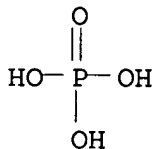


RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA  
CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

INCL 252186200; 252186430; 252186440

CC 60-4 (Waste Treatment and Disposal)

Section cross-reference(s): 5, 19, 51

IT 57-11-4, Stearic acid, uses 57-50-1, Granulated sugar, uses  
144-55-8, Sodium bicarbonate, uses 471-34-1, Calcium carbonate, uses  
557-04-0, Magnesium stearate 563-71-3, Ferrous carbonate  
1305-79-9, Calcium peroxide 1318-74-7, Kaolinite, uses 1318-93-0,  
Montmorillonite, uses 1592-23-0, Calcium stearate 4070-80-8,  
Sodium stearyl fumarate 7631-99-4, Sodium nitrate, uses  
7632-05-5, Sodium phosphate 7664-38-2,  
Orthophosphoric acid, uses 7720-78-7, Ferrous  
sulfate 7757-79-1, Potassium nitrate, uses 7758-29-4, Sodium  
tripolyphosphate 7782-44-7, Oxygen, uses 7785-84-4, Sodium

trimetaphosphate 9005-25-8, Starch, uses 9063-38-1, Sodium starch glycolate 10103-46-5, Calcium phosphate 14265-44-2, Phosphate, uses 14452-57-4, Magnesium peroxide 14476-12-1, Rhodochrosite 14476-16-5, Siderite 14807-96-6, Talc, uses 16068-46-5, Potassium phosphate 17375-37-0, Manganese carbonate 53006-98-7, Sodium potassium phosphate 61538-65-6, Potassium sodium nitrate 74811-65-7, Croscarmellose sodium 208116-24-9

(solid chem. compn. for nonexothermic oxidn. and aerobic bioremediation of environmental contaminants)

L47 ANSWER 3 OF 56 HCA COPYRIGHT 2010 ACS on STN

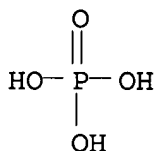
143:168140 Urea-based **fertilizer**, fungicide and insecticide compositions and their production. Blount, David H. (USA). U.S. Pat. Appl. Publ. US 20050166652 A1 20050804, 9 pp., Cont.-in-part of U.S. Ser. No. 859,716. (English). CODEN: USXXCO. APPLICATION: US 2004-10654 20041213. PRIORITY: US 1996-723779 19960930; US 1998-149847 19980908; US 2000-693194 20001023; US 2001-973553 20011009; US 2004-859716 20040603.

AB **Fertilizer**, fungicide and insecticide compns. are produced by reacting urea with an acidic mineral acid compd., then reacting this urea salt of mineral acid with a basic salt-forming compd. such as potassium hydroxide. The potassium urea salts of phosphorus-, boron- or sulfur-contg. compds. are **fertilizer**, fungicide and insecticide compns. that may be applied by spraying on plants in a dil. aq. soln. to give plants some protection against dry rot, fungi and insects and also fertilize the plant. The compns. also act as an insecticide against insects such as termites, cockroaches and ants.

IT 16068-46-5, Potassium phosphate  
(filler; in urea-based **fertilizer**, fungicide and insecticide compns.)

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



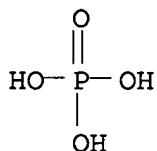
●x K

IT 7758-11-4P

(filler; in urea-based **fertilizer**, fungicide and insecticide compns.)

RN 7758-11-4 HCA

CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)

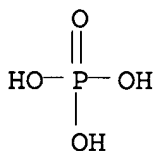


● 2 K

IT 7664-38-2DP, Phosphoric acid, reaction products with urea and basic salt-forming compds. 7757-86-0DP, Magnesium hydrogen phosphate, reaction products with urea and acidic salt-forming compds. 7778-77-0DP, reaction products with urea and basic salt-forming compds.  
(prodn. of urea-based fertilizer, fungicide and insecticide compns.)

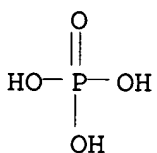
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 7757-86-0 HCA

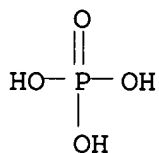
CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



● Mg

RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC ICM C05F001-00  
 INCL 071011000  
 CC 5-4 (Agrochemical Bioregulators)  
 Section cross-reference(s): 19  
 ST potassium urea salt **fertilizer** fungicide insecticide  
 IT Polyphosphoric acids  
 (ammonium salts, reaction products with urea and basic salt-forming  
 compds.; prodn. of urea-based **fertilizer**, fungicide and  
 insecticide compns.)  
 IT Sawdust  
 (filler; in urea-based **fertilizer**, fungicide and  
 insecticide compns.)  
 IT Aminoplasts  
 Carbohydrates  
 Phenolic resins  
 Phosphates  
 Polyphosphates  
 (filler; in urea-based **fertilizer**, fungicide and  
 insecticide compns.)  
 IT Borates  
 Carbonates  
 Diatomite  
 Oxides (inorganic)  
 Silicates  
 Sulfates  
 (filler; in urea-based **fertilizer**, fungicide and  
 insecticide compns.)  
 IT Amines  
 (polyamines, nonpolymeric, reaction products with urea and mineral  
 acid compd.; prodn. of urea-based **fertilizer**, fungicide  
 and insecticide compns.)  
 IT Polymers  
 (powd., filler; in urea-based **fertilizer**, fungicide and  
 insecticide compns.)  
 IT Fungicides  
 Insecticides  
 (prodn. of **fertilizer**, fungicide and insecticide compns.  
 by reacting urea with acidic and basic salt-forming compds.)  
 IT **Fertilizers**

(prodn. of **fertilizer**, fungicide and insecticide compns.  
by reacting urea with acidic and basic salt-forming compds.)

- IT Phosphines  
Phosphites  
Phosphonates  
Thioureas  
(reaction products with urea and basic salt-forming compds.; prodn.  
of urea-based **fertilizer**, fungicide and insecticide  
compns.)
- IT Alkali metal compounds  
Alkaline earth compounds  
Amines  
(reaction products with urea and mineral acid compd.; prodn. of  
urea-based **fertilizer**, fungicide and insecticide compns.)
- IT 108-78-1, Melamine, biological studies 7320-34-5, Tetrapotassium  
pyrophosphate **16068-46-5**, Potassium phosphate 37640-57-6,  
Melamine cyanurate  
(filler; in urea-based **fertilizer**, fungicide and  
insecticide compns.)
- IT 62-56-6P, Thiourea, biological studies 113-00-8P, Guanidine  
461-58-5P, Dicyandiamide 506-87-6P, Ammonium carbonate 1309-64-4P,  
Antimony trioxide, biological studies 4401-74-5P 7631-86-9P,  
Silica, biological studies **7758-11-4P** 7773-06-0P, Ammonium  
sulfamate 7782-42-5P, Graphite, biological studies 7783-20-2P,  
Ammonium sulfate, biological studies 7784-30-7P, Aluminum phosphate  
7786-30-3P, Magnesium chloride, biological studies 9003-35-4P,  
Phenol-formaldehyde resin 10124-31-9P, Ammonium phosphate  
11128-98-6P, Ammonium borate 13308-51-5P, Boron phosphate  
22690-73-9P, Ammonium pyrophosphate 41583-09-9P, Melamine phosphate  
53587-44-3P, Melamine borate 100224-74-6P, Guanidine carbonate  
561314-20-3P 830336-38-4P 830336-39-5P  
(filler; in urea-based **fertilizer**, fungicide and  
insecticide compns.)
- IT 1344-09-8P, Sodium silicate 1344-28-1P, Aluminum oxide, biological  
studies  
(powd., filler; in urea-based **fertilizer**, fungicide and  
insecticide compns.)
- IT 860639-57-2P 860639-58-3P  
(prodn. and use as **fertilizer**, fungicide and insecticide)
- IT 202924-61-6, Urea borate 471256-45-8  
(prodn. and use of **fertilizer**, fungicide and insecticide  
compns. contg.)
- IT 57-13-6DP, Urea, reaction products with acidic salt and basic  
salt-forming compds. 77-92-9DP, Citric acid, reaction products with  
urea and basic salt-forming compds. 78-38-6DP, Diethyl  
ethylphosphonate, reaction products with urea and acidic salt-forming  
compds. 101-02-0DP, Triphenyl phosphite, reaction products with urea  
and basic salt-forming compds. 108-78-1DP, Melamine, hydrogen  
boron-phosphate, reaction products with urea and basic salt-forming  
compds. 108-78-1DP, Melamine, salt with boron-hydrogen phosphate,  
reaction products with urea and urea borate 121-45-9DP, Trimethyl

phosphite, reaction products with urea and basic salt-forming compds. 122-52-1DP, Triethyl phosphite, reaction products with urea and basic salt-forming compds. 140-08-9DP, Tris(2-chloroethyl) phosphite, reaction products with urea and basic salt-forming compds. 598-50-5DP, Methyl urea, reaction products with acidic salt and basic salt-forming compds. 701-64-4DP, Phenyl acid phosphate, reaction products with urea and basic salt-forming compds. 756-79-6DP, Dimethyl methylphosphonate, reaction products with urea and basic salt-forming compds. 756-80-9DP, O,O-Dimethyl hydrogen dithiophosphate, reaction products with urea and basic salt-forming compds. 762-04-9DP, Diethyl phosphite, reaction products with urea and basic salt-forming compds. 813-78-5DP, reaction products with urea and acidic salt-forming compds. 868-85-9DP, Dimethyl hydrogen phosphite, reaction products with urea and basic salt-forming compds. 1310-58-3DP, Potassium hydroxide, reaction products with urea and acidic salt-forming compds. 1314-56-3DP, Phosphorus oxide, reaction products with urea and basic salt-forming compds. 1332-07-6DP, Zinc borate, reaction products with urea and acidic salt-forming compds. 1336-21-6DP, Ammonium hydroxide, reaction products with urea and acidic salt-forming compd. 1336-21-6DP, Aqua ammonia, reaction products with urea and acidic salt-forming compds. 1763-07-1DP, reaction products with urea and urea borate 2466-09-3DP, Pyrophosphoric acid, reaction products with urea and basic salt-forming compds. 3982-91-0DP, Phosphorus thiochloride, reaction products with urea and basic salt-forming compds. 4861-19-2DP, Urea dihydrogen phosphate, reaction products with urea and basic salt-forming compds. 6145-73-9DP, Tris(2-chloropropyl) phosphate, reaction products with urea and basic salt-forming compds. 6303-21-5DP, Phosphinic acid, reaction products with urea and basic salt-forming compds. 7440-42-8DP, Boron, compds., reaction products with urea and basic salt-forming compds. **7664-38-2DP, Phosphoric acid**, reaction products with urea and basic salt-forming compds. 7664-41-7DP, Ammonia, reaction products with urea and mineral acid compd. 7664-93-9DP, Sulfuric acid, reaction products with urea and basic salt-forming compds. 7704-34-9DP, Sulfur, compds., reaction products with urea and basic salt-forming compds. 7719-12-2DP, Phosphorus trichloride, reaction products with urea and basic salt-forming compds. 7722-76-1DP, Ammonium dihydrogen phosphate, reaction products with urea and basic salt-forming compds. 7723-14-0DP, Phosphorus, compds., reaction products with urea and basic salt-forming compds. **7757-86-0DP**, Magnesium hydrogen phosphate, reaction products with urea and acidic salt-forming compds. **7778-77-0DP**, reaction products with urea and basic salt-forming compds. 7783-28-0DP, Ammonium hydrogen phosphate, reaction products with urea and basic salt-forming compds. 7784-30-7DP, Aluminum phosphate, reaction products with urea and acidic salt-forming compds. 7784-30-7DP, Monoaluminum phosphate, reaction products with urea and basic salt-forming compds. 7789-60-8DP, Phosphorus tribromide, reaction products with urea and basic salt-forming compds. 7803-60-3DP, Hypophosphoric acid, reaction products with urea and basic salt-forming compds.

10025-87-3DP, Phosphorus oxytrichloride, reaction products with urea and basic salt-forming compds. 10043-35-3DP, Boric acid, reaction products with urea and basic salt-forming compds. 10343-62-1DP, Metaphosphoric acid, reaction products with urea and basic salt-forming compds. 10380-08-2DP, Triphosphoric acid, reaction products with urea and basic salt-forming compds. 13446-12-3DP, Monoammonium phosphite, reaction products with urea and basic salt-forming compd. 13492-26-7DP, reaction products with urea and basic salt-forming compds. 13598-36-2DP, Phosphorous acid, hydro-, reaction products with urea and basic salt-forming compds., biological studies 13598-36-2DP, Phosphorous acid, reaction products with urea and basic salt-forming compds. 13840-40-9DP, Phosphine oxide, reaction products with urea and basic salt-forming compds. 14332-09-3DP, Hypophosphorous acid, reaction products with urea and basic salt-forming compds. 17466-29-4DP, Potassium phosphite, reaction products with urea and basic salt-forming compd. 20502-96-9DP, reaction products with urea and basic salt-forming compds. 22132-71-4DP, reaction products with urea and basic salt-forming compd. 25756-87-0DP, Phosphinous acid, reaction products with urea and basic salt-forming compds. 26071-57-8DP, Aminoguanidine phosphate, reaction products with urea and urea borate 28901-77-1DP, reaction products with urea and basic salt-forming compds. 53749-55-6DP, reaction products with urea and urea borate 56974-60-8DP, Dimelamine phosphate, reaction products with urea and basic salt-forming compds. 63175-05-3DP, Dicyandiamide phosphate, reaction products with urea and urea borate 203116-02-3DP, reaction products with urea and urea borate 211302-81-7DP, reaction products with urea and urea borate 211302-83-9DP, reaction products with urea and urea borate 211302-85-1DP, reaction products with urea and urea borate 211302-87-3DP, reaction products with urea and urea borate 211302-88-4DP, reaction products with urea and urea borate 561314-29-2DP, reaction products with urea and urea borate 561314-31-6DP, reaction products with urea and urea borate 830336-40-8DP, reaction products with urea and urea borate 830336-41-9DP, reaction products with urea and urea borate 830336-42-0DP, reaction products with urea and urea borate (prodn. of urea-based **fertilizer**, fungicide and insecticide compns.)

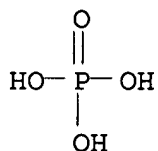
L47 ANSWER 4 OF 56 HCA COPYRIGHT 2010 ACS on STN

143:25959 Hydrolyzed urea **fertilizer**, fungicide and insecticide. Blount, David H. (USA). U.S. Pat. Appl. Publ. US 20050130841 A1 20050616, 10 pp., Cont.-in-part of U.S. Ser. No. 922,291. (English). CODEN: USXXCO. APPLICATION: US 2004-974996 20041028. PRIORITY: US 1996-723779 19960930; US 1997-801776 19970214; US 2000-532646 20000322; US 2001-941402 20010830; US 2004-922291 20040820.

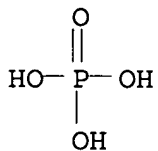
AB Partially-hydrolyzed urea is produced by heating urea with a limited amt. of water and continue heating until water reacts with the urea. The partially-hydrolyzed urea may be used alone or may be mixed with or reacted with salt-forming compds. and mixed with fillers to produce a partially-hydrolyzed urea compn. which is a fast acting and a long

acting **fertilizer**. The partially-hydrolyzed urea salts of phosphorus, boron or sulfur contg. compds., with or without fillers, may also be used as insecticides, fungicides and **fertilizers**

IT 7664-38-2DP, **Phosphoric acid**, reaction product with partially-hydrolyzed urea 7757-86-0DP, Magnesium hydrogen phosphate, reaction product with partially-hydrolyzed urea 7778-77-0DP, reaction product with partially-hydrolyzed urea (manuf. as **fertilizer**, fungicide and insecticide)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)

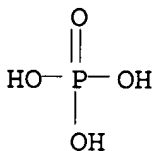


RN 7757-86-0 HCA  
 CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



● Mg

RN 7778-77-0 HCA  
 CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC ICM C05G003-00  
 INCL 504101000  
 CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST hydrolyzed urea **fertilizer** fungicide insecticide

IT **Fertilizers**  
 (hydrolyzed urea)

IT Polyphosphoric acids  
 (reaction product with partially-hydrolyzed urea; manuf. as **fertilizer**, fungicide and insecticide)

IT 57-13-6DP, Urea, partially-hydrolyzed 77-92-9DP, Citric acid, reaction product with partially-hydrolyzed urea 101-02-0DP, Triphenyl phosphite, reaction product with partially-hydrolyzed urea 121-45-9DP, Trimethyl phosphite, reaction product with partially-hydrolyzed urea 122-52-1DP, Triethyl phosphite, reaction product with partially-hydrolyzed urea 140-08-9DP, Tris(2-chloroethyl) phosphite, reaction product with partially-hydrolyzed urea 701-64-4DP, Phenyl acid phosphate, reaction product with partially-hydrolyzed urea 756-79-6DP, Dimethyl methylphosphonate, reaction product with partially-hydrolyzed urea 756-80-9DP, O,O-Dimethyl hydrogen dithiophosphate, reaction product with partially-hydrolyzed urea 762-04-9DP, Diethyl phosphite, reaction product with partially-hydrolyzed urea 868-85-9DP, Dimethyl hydrogen phosphite, reaction product with partially-hydrolyzed urea 1314-56-3DP, Phosphorus oxide, reaction product with partially-hydrolyzed urea 1763-07-1DP, reaction product with partially-hydrolyzed urea 2466-09-3DP, Pyrophosphoric acid, reaction product with partially-hydrolyzed urea 3982-91-0DP, Phosphorus thiochloride, reaction product with partially-hydrolyzed urea 4401-74-5DP, reaction product with partially-hydrolyzed urea 4861-19-2DP, Urea dihydrogen phosphate, reaction product with partially-hydrolyzed urea 6145-73-9DP, Tris(2-chloropropyl phosphate), reaction product with partially-hydrolyzed urea 6303-21-5DP, Phosphinic acid, reaction product with partially-hydrolyzed urea **7664-38-2DP, Phosphoric acid**, reaction product with partially-hydrolyzed urea 7664-41-7DP, Ammonia, reaction product with partially-hydrolyzed urea 7664-93-9DP, Sulfuric acid, reaction product with partially-hydrolyzed urea 7719-12-2DP, Phosphorus trichloride, reaction product with partially-hydrolyzed urea 7722-76-1DP, Ammonium dihydrogen phosphate, reaction product with partially-hydrolyzed urea 7723-14-0DP, Phosphorus, reaction product with partially-hydrolyzed urea **7757-86-0DP**, Magnesium hydrogen phosphate, reaction product with partially-hydrolyzed urea **7778-77-0DP**, reaction product with partially-hydrolyzed urea 7783-28-0DP, Ammonium hydrogen phosphate, reaction product with partially-hydrolyzed urea 7784-30-7DP, Monoaluminum phosphate, reaction product with partially-hydrolyzed urea 7803-60-3DP, Hypophosphoric acid, reaction product with partially-hydrolyzed urea 10025-87-3DP, Phosphorus oxytrichloride, reaction product with partially-hydrolyzed urea 10043-35-3DP, Boric acid, reaction product with partially-hydrolyzed urea 13598-36-2DP, Phosphorous acid, reaction product with partially-hydrolyzed urea 13840-40-9DP, Phosphine oxide, reaction product with partially-hydrolyzed urea 17466-29-4DP, reaction product with partially-hydrolyzed urea 20502-96-9DP, reaction

product with partially-hydrolyzed urea 25756-87-0DP, Phosphinous acid, reaction product with partially-hydrolyzed urea 26071-57-8DP, AminoGuanidine phosphate, reaction product with partially-hydrolyzed urea 28901-77-1DP, Dibutyl pyrophosphate, reaction product with partially-hydrolyzed urea 41583-09-9DP, Melamine phosphate, reaction product with partially-hydrolyzed urea 53749-55-6DP, reaction product with partially-hydrolyzed urea 56974-60-8DP, DiMelamine phosphate, reaction product with partially-hydrolyzed urea 135840-43-6DP, reaction product with partially-hydrolyzed urea 203116-02-3DP, reaction product with partially-hydrolyzed urea 211302-82-8DP, reaction product with partially-hydrolyzed urea 211302-83-9DP, reaction product with partially-hydrolyzed urea 211302-85-1DP, reaction product with partially-hydrolyzed urea 211302-87-3DP, reaction product with partially-hydrolyzed urea 211302-88-4DP, reaction product with partially-hydrolyzed urea 219146-13-1DP, reaction product with partially-hydrolyzed urea 561314-29-2DP, reaction product with partially-hydrolyzed urea 561314-31-6DP, reaction product with partially-hydrolyzed urea 830336-38-4DP, reaction product with partially-hydrolyzed urea 830336-42-0DP, reaction product with partially-hydrolyzed urea 853078-40-7DP, reaction product with partially-hydrolyzed urea (manuf. as **fertilizer**, fungicide and insecticide)

L47 ANSWER 5 OF 56 HCA COPYRIGHT 2010 ACS on STN

142:254568 Methods and compositions for increasing the efficacy of biologically-active ingredients such as antitumor agents. Windsor, J. Brian; Roux, Stan J.; Lloyd, Alan M.; Thomas, Collin E. (Board of Regents, the University of Texas System, USA). PCT Int. Appl. WO 2005014777 A2 20050217, 243 pp. CODEN: PIXXD2. APPLICATION: WO 2003-US32667 20031016. PRIORITY: US 2002-418803P 20021016.

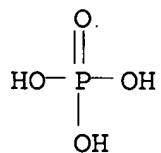
AB The invention provides methods and compns. for modulating the sensitivity of cells to cytotoxic compds. and other active agents. In accordance with the invention, compns. are provided comprising combinations of ectophosphatase inhibitors and active agents. Active agents include antibiotics, fungicides, herbicides, insecticides, chemotherapeutic agents, and plant growth regulators. By increasing the efficacy of active agents, the invention allows use of compns. with lowered concns. of active ingredients.

IT 7558-79-4 7558-80-7 7601-54-9  
7632-05-5 7664-38-2, Phosphoric acid, biological studies 7758-11-4 7758-87-4  
7778-53-2 7778-77-0 10103-46-5

(methods and compns. for increasing efficacy of biol. active ingredients such as antitumor agents)

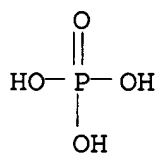
RN 7558-79-4 HCA

CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



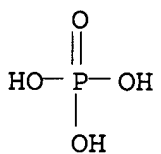
●2 Na

RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



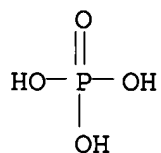
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



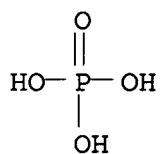
●3 Na

RN 7632-05-5 HCA  
CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)

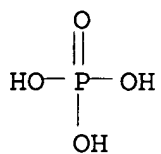


●x Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

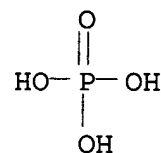


RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

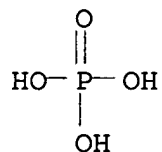
RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●3/2 Ca

RN 7778-53-2 HCA

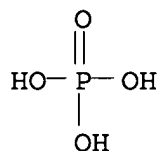
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●3 K

RN 7778-77-0 HCA

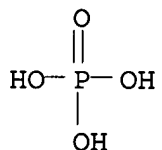
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

RN 10103-46-5 HCA

CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

IC ICM C12N

CC 1-6 (Pharmacology)

IT Amino acids, biological studies

Aminoglycosides

Androgens

Asbestos

Asphalt

Bentonite, biological studies

Canola oil

Carbon black, biological studies

Caseins, biological studies  
 Castor oil  
 Chlorinated natural rubber  
 Coal tar  
 Coconut oil  
 Cod liver oil  
 Collagens, biological studies  
 Corn oil  
 Corticosteroids, biological studies  
 Cottonseed oil  
 Creosote oil  
 Cytokinins  
 Diatomite  
 Epoxy resins, biological studies  
 Essential oils  
 Feldspar-group minerals  
     **Fertilizers**  
 Gasoline  
 Gelatins, biological studies  
 Gibberellins  
 Glycopeptides  
 Granite, biological studies  
 Growth regulators, plant  
 Humic acids  
 Jojoba oil  
 Kaolin, biological studies  
 Kerosene  
 Lard  
 Ligroine  
 Lime (chemical)  
 Linseed oil  
 Macrolides  
 Mica-group minerals, biological studies  
 Naphthenic acids, biological studies  
 Naphthenic oils  
 Natural products, pharmaceutical  
 Nitrile rubber, biological studies  
 Olive oil  
 Palm oil  
 Paraffin oils  
 Paraffin waxes, biological studies  
 Peanut oil  
 Perlite  
 Petrolatum  
 Petroleum hydrocarbons  
 Petroleum resins  
 Petroleum spirits  
 Phenols, biological studies  
 Phosphoproteins  
 Plastics, biological studies  
 Polyamide fibers, biological studies

Polyamides, biological studies  
 Polyenes  
 Polyoxyalkylenes, biological studies  
 Polyvinyl butyrals  
 Progestogens  
 Protein hydrolyzates  
 Pumice  
 Pyrethrins  
 Rape oil  
 Resins  
 Rosin  
 Rubber, biological studies  
 Safflower oil  
 Sand  
 Saponins  
 Shale  
 Shellac  
 Silica gel, biological studies  
 Soapstone  
 Soybean oil  
 Tall oil  
 Tallow  
 Tetracyclines  
 Tung oil  
 Turpentine  
 Waxes  
 Wood tar  
 Zeins

(methods and compns. for increasing efficacy of biol. active ingredients such as antitumor agents)

IT **Fertilizers**

(sewage sludge; methods and compns. for increasing efficacy of biol. active ingredients such as antitumor agents)

IT 100-00-5 100-41-4, biological studies 100-44-7, biological studies  
 100-51-6, Benzenemethanol, biological studies 100-56-1 100-57-2  
 100-94-7D, acylamido alkyl derivs. 100-95-8 101-05-3 101-20-2  
 101-21-3 101-42-8 101-81-5 101-84-8D, tetrapropylene derivs.,  
 sulfonated, sodium salts 102-07-8 102-30-7 102-71-6D, copper  
 hydroxide complexes 103-11-7 103-27-5 104-28-9 104-54-1  
 104-55-2 104-60-9 104-76-7 105-67-9 106-22-9 106-23-0  
 106-24-1 106-44-5, biological studies 106-46-7 106-48-9  
 106-88-7 106-93-4 106-96-7 106-97-8, Butane, biological studies  
 106-99-0, 1,3-Butadiene, biological studies 107-04-0 107-06-2,  
 biological studies 107-18-6, 2-Propen-1-ol, biological studies  
 107-19-7, 2-Propyn-1-ol 107-26-6 107-27-7 107-31-3 107-49-3  
 107-64-2 108-05-4, Acetic acid ethenyl ester, biological studies  
 108-07-6 108-11-2 108-24-7 108-31-6, 2,5-Furandione, biological  
 studies 108-39-4, biological studies 108-46-3, 1,3-Benzenediol,  
 biological studies 108-80-5, 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione  
 108-83-8 108-88-3, biological studies 108-90-7, biological studies  
 108-93-0, Cyclohexanol, biological studies 108-94-1, Cyclohexanone,

biological studies 108-95-2, Phenol, biological studies 109-62-6  
 109-66-0, Pentane, biological studies 109-69-3 109-76-2D,  
 1,3-Propanediamine, N-C12-18alkyl derivs. 109-76-2D,  
 1,3-Propanediamine, N-C15-18alkyl derivs., diacetate 109-76-2D,  
 1,3-Propanediamine, N-C6-18alkyl derivs., acetate 109-76-2D,  
 1,3-Propanediamine, N-C6-18alkyl derivs., diacetate 109-76-2D,  
 1,3-Propanediamine, N-alkyl derivs. 109-76-2D, 1,3-Propanediamine,  
 N-alkyl derivs. hydrochloride 109-76-2D, 1,3-Propanediamine, N-alkyl  
 derivs., propionate-copper complex 109-76-2D, 1,3-Propanediamine,  
 N-alkyl derivs., salts 109-76-2D, 1,3-Propanediamine, N-coco-alkyl  
 derivs., adipate 109-76-2D, 1,3-Propanediamine, N-coco-alkyl  
 derivs., hydroxyacetate 109-76-2D, 1,3-Propanediamine, N-coco-alkyl  
 derivs., monobenzoate 109-79-5, 1-Butanethiol 109-94-4 109-99-9,  
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 biological studies 110-19-0 110-43-0, 2-Heptanone 110-54-3,  
 Hexane, biological studies 110-66-7, 1-Pentanethiol 110-80-5  
 110-82-7, Cyclohexane, biological studies 110-88-3, 1,3,5-Trioxane,  
 biological studies 111-01-3 111-20-6, Decanedioic acid, biological  
 studies 111-27-3, 1-Hexanol, biological studies 111-70-6,  
 1-Heptanol 111-76-2 111-77-3 111-87-5, 1-Octanol, biological  
 studies 111-90-0 111-98-8 112-02-7 112-05-0, Nonanoic acid  
 112-30-1, 1-Decanol 112-31-2, Decanal 112-34-5 112-44-7,  
 Undecanal 112-53-8, 1-Dodecanol 112-54-9, Dodecanal 112-62-9  
 112-72-1, 1-Tetradecanol 112-92-5, 1-Octadecanol 113-98-4  
 114-26-1 115-07-1, 1-Propene, biological studies 115-10-6  
 115-28-6 115-29-7 115-31-1 115-32-2 115-90-2 115-93-5  
 116-01-8 116-02-9 116-06-3 116-16-5 116-25-6 116-52-9  
 117-52-2 117-81-7 117-84-0 118-34-3 118-52-5 118-56-9  
 118-74-1 119-12-0 119-38-0 120-23-0 120-32-1 120-39-8  
 120-47-8 120-72-9, 1H-Indole, biological studies 120-78-5  
 120-82-1 120-83-2 120-94-5 121-20-0 121-21-1 121-29-9  
 121-33-5 121-54-0 121-75-5 122-10-1 122-14-5 122-15-6  
 122-19-0 122-34-9 122-37-2 122-39-4, biological studies  
 122-42-9 122-64-5 122-70-3 122-97-4, Benzenepropanol 123-17-1  
 123-33-1 123-35-3 123-66-0 123-86-4 123-88-6 123-91-1,  
 1,4-Dioxane, biological studies 123-92-2 124-03-8 124-07-2,  
 Octanoic acid, biological studies 124-13-0, Octanal 124-16-3  
 124-25-4, Tetradecanal 124-38-9, Carbon dioxide, biological studies  
 124-48-1 124-58-3 124-65-2 125-67-7 125-84-8 126-06-7  
 126-07-8 126-22-7 126-73-8, **Phosphoric acid**  
 tributyl ester, biological studies 126-75-0 126-94-3 127-07-1  
 127-18-4, biological studies 127-41-3 127-82-2 128-03-0  
 128-04-1 128-37-0, biological studies 128-80-3 129-06-6  
 129-67-9 131-11-3 131-52-2 131-55-5 131-57-7 131-89-5  
 132-27-4 132-66-1 132-67-2 133-06-2 133-07-3 133-90-4  
 136-24-3 136-32-3 136-45-8 136-53-8 136-77-6 137-16-6  
 137-26-8 137-30-4 137-40-6 137-41-7 137-42-8 138-86-3  
 139-02-6 139-07-1 139-08-2 139-12-8 139-13-9 139-33-3  
 139-40-2 139-89-9 140-39-6 140-41-0 140-88-5 141-00-4  
 141-27-5 141-66-2 142-03-0 142-47-2 142-59-6 142-71-2  
 142-87-0 143-18-0 143-28-2 143-33-9, Sodium cyanide (Na(CN))

143-50-0 144-21-8 144-41-2 144-55-8, Carbonic acid monosodium salt, biological studies  
(methods and compns. for increasing efficacy of biol. active ingredients such as antitumor agents)

IT 2971-38-2 2991-51-7 3004-70-4 3032-40-4 3049-71-6 3050-27-9  
3060-89-7 3097-08-3 3134-12-1 3134-70-1 3184-65-4 3247-34-5  
3251-23-8 3279-27-4 3279-46-7 3282-00-6 3282-73-3 3304-97-0  
3309-87-3 3337-71-1 3380-34-5 3383-96-8 3391-86-4,  
1-Octen-3-ol 3397-62-4 3452-97-9 3478-94-2 3486-30-4  
3486-35-9 3566-00-5 3566-10-7 3567-62-2 3568-56-7 3572-06-3  
3583-63-9 3615-21-2 3626-13-9 3658-77-3 3689-24-5 3691-35-8  
3724-65-0D, 2-Butenoic acid, esters 3734-49-4 3734-95-0  
3734-97-2 3735-23-7 3735-33-9 3737-22-2 3740-92-9 3766-60-7  
3766-81-2 3768-14-7 3772-94-9 3778-73-2 3792-59-4 3811-04-9  
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3960-05-2 4029-02-1 4075-81-4 4095-45-8 4097-34-1 4097-36-3  
4147-51-7 4147-57-3 4154-35-2 4234-79-1 4342-03-4 4342-30-7  
4342-36-3 4418-66-0 4419-22-1 4466-14-2 4476-04-4 4482-55-7  
4489-31-0 4602-84-0 4636-83-3 4644-96-6 4654-26-6 4658-28-0  
4665-55-8 4684-94-0 4685-14-7 4706-78-9 4719-04-4 4726-14-1  
4808-30-4 4812-20-8 4824-78-6 4849-32-5 4938-72-1 5012-62-4  
5026-62-0 5035-58-5 5064-31-3 5131-24-8 5131-66-8 5136-51-6  
5137-55-3 5221-53-4 5234-68-4 5251-79-6 5251-93-4 5259-88-1  
5281-04-9 5324-84-5 5328-04-1 5331-91-9 5335-24-0 5375-87-1  
5386-57-2 5386-68-5 5386-77-6 5406-97-3 5468-43-9 5471-51-2  
5538-94-3 5598-13-0 5598-15-2 5598-52-7 5716-15-4 5722-59-8  
5723-62-6 5736-15-2 5742-19-8 5787-50-8 5822-97-9 5823-13-2  
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6012-84-6 6028-57-5 6073-72-9 6120-20-3 6190-65-4 6273-99-0  
6303-21-5, Phosphinic acid 6365-83-9 6369-97-7 6373-07-5,  
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salt, biological studies 6550-86-3 6552-12-1 6565-70-4  
6597-78-0 6616-80-4 6683-19-8 6734-80-1 6753-47-5 6798-76-1  
6834-92-0 6915-15-7 6923-22-4 6988-21-2 6998-60-3, Rifamycin  
7076-63-3 7097-60-1 7110-49-8D, nickel complexes 7122-04-5  
7159-99-1 7166-19-0 7173-51-5 7206-15-7 7206-27-1 7212-44-4  
7257-41-2 7281-04-1 7286-69-3 7286-84-2 7287-19-6 7287-36-7  
7292-16-2 7313-54-4 7320-34-5 7345-69-9 7350-09-6 7359-55-9  
7379-26-2 7379-27-3 7411-47-4 7421-93-4 7429-90-5, Aluminum,  
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7439-92-1, Lead, biological studies 7439-97-6, Mercury, biological  
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7440-23-5, Sodium, biological studies 7440-36-0, Antimony,  
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7440-42-8, Boron, biological studies 7440-43-9, Cadmium, biological  
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 7446-70-0, Aluminum chloride ( $\text{AlCl}_3$ ), biological studies 7447-40-7,  
 Potassium chloride ( $\text{KCl}$ ), biological studies 7447-41-8, Lithium  
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 7491-21-6 7553-56-2, Iodine, biological studies **7558-79-4**  
**7558-80-7** 7562-87-0D, 3-(C12-15-alkyloxy)derivs., chlorides  
 7575-62-4 7585-39-9D,  $\beta$ -Cyclodextrin, copper hydroxide  
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(methods and compns. for increasing efficacy of biol. active  
 ingredients such as antitumor agents)

IT 7600-50-2 **7601-54-9** 7631-89-2 7631-90-5 7631-95-0  
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 7632-04-4 **7632-05-5** 7646-85-7, Zinc chloride ( $\text{ZnCl}_2$ ),  
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**7664-38-2, Phosphoric acid**, biological  
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 7664-41-7, Ammonia, biological studies 7664-93-9, Sulfuric acid,  
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 7705-08-0, Iron chloride ( $\text{FeCl}_3$ ), biological studies 7720-78-7  
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 7727-37-9, Nitrogen, biological studies 7727-43-7 7732-18-5,  
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 7758-09-0 **7758-11-4** 7758-16-9 7758-19-2 7758-29-4  
**7758-87-4** 7758-89-6, Copper chloride ( $\text{CuCl}$ ) 7758-98-7,  
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 7778-39-4, Arsenic acid ( $\text{H}_3\text{AsO}_4$ ) 7778-44-1 7778-50-9  
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 biological studies 7779-27-3 7782-42-5, Graphite, biological  
 studies 7782-49-2, Selenium, biological studies 7782-50-5,  
 Chlorine, biological studies 7782-63-0 7782-68-5, Iodic acid  
 ( $\text{HIO}_3$ ) 7783-06-4, Hydrogen sulfide ( $\text{H}_2\text{S}$ ), biological studies  
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chloride (AgCl), biological studies 7783-96-2, Silver iodide (AgI)  
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 7784-46-5 7785-87-7 7785-88-8 7786-30-3, Magnesium chloride  
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 7789-00-6 7789-09-5 7789-12-0 7789-29-9, Potassium fluoride  
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 7791-18-6 7791-25-5, Sulfuryl chloride 7803-51-2, Phosphine  
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 8003-19-8D, derivs. 8004-87-3, C.I. Basic Violet 1 8005-46-7  
 8011-63-0, Bordeaux mixture 8012-69-9 8013-17-0 8015-35-8  
 8018-01-7 8022-00-2 8029-29-6, Bandane 8030-15-7, Turgasept  
 8030-53-3 8063-85-2 8064-49-1, Sustane 3 8064-49-1 8065-36-9  
 8065-48-3 8066-01-1 8068-77-7 8070-76-6 8071-40-7 8073-53-8  
 8075-57-8 8076-84-4 9000-07-1, Carrageenan 9000-28-6, Gum ghatti  
 9000-30-0, Guar gum 9000-40-2, Carob gum 9000-65-1, Gum tragacanth  
 9001-73-4, Papain 9002-86-2 9003-01-4 9003-05-8 9003-11-6D,  
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 9004-58-4 9004-62-0 9004-65-3 9004-67-5 9004-70-0 9004-82-4  
 9005-25-8D, Starch,  $\alpha$ -type, amycol, biological studies  
 9005-38-3 9005-53-2, Lignin, biological studies 9006-42-2, Metiram  
 9010-77-9 9012-76-4, Chitosan 9015-68-3, Asparaginase 9016-00-6,  
 Poly[oxy(dimethylsilylene)] 9017-80-5 9038-29-3 9080-17-5,  
 Ammonium sulfide ((NH<sub>4</sub>)<sub>2</sub>(Sx)) 10007-85-9 10022-31-8 10024-97-2,  
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 acid 10039-54-0 10042-84-9 10043-01-3 10043-35-3, Boric acid  
 (H<sub>3</sub>BO<sub>3</sub>), biological studies 10043-52-4, Calcium chloride (CaCl<sub>2</sub>),  
 biological studies 10043-67-1 10045-86-0 10045-89-3  
 10049-04-4, Chlorine oxide (ClO<sub>2</sub>) 10058-23-8 10061-02-6  
 10101-39-0 10101-41-4 10101-50-5 10101-97-0 10102-90-6  
**10103-46-5** 10103-48-7 10103-50-1 10108-64-2, Cadmium  
 chloride (CdCl<sub>2</sub>) 10112-91-1, Mercury chloride (Hg<sub>2</sub>Cl<sub>2</sub>) 10117-38-1  
 10124-36-4 10124-41-1 10124-43-3 10124-50-2 10124-65-9  
 10125-13-0 10137-74-3 10138-04-2 10213-78-2 10233-94-0  
 10248-55-2 10254-48-5 10257-54-2 10265-92-6 10279-57-9  
 10290-12-7 10294-66-3 10309-97-4 10311-84-9 10326-21-3  
 10326-24-6 10331-57-4 10361-16-7 10361-37-2, Barium chloride  
 (BaCl<sub>2</sub>), biological studies 10377-60-3 10380-28-6 10389-50-1  
 10402-15-0 10402-16-1 10453-86-8 10486-00-7  
 (methods and compns. for increasing efficacy of biol. active  
 ingredients such as antitumor agents)

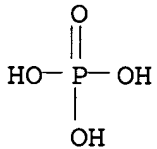
L47 ANSWER 6 OF 56 HCA COPYRIGHT 2010 ACS on STN

142:224814 Method using phosphate salt and complexing agent for  
 chemiophys. stabilization of waste to prevent heavy metal leaching.  
 Forrester, Keith Edward (USA). U.S. Pat. Appl. Publ. US 20050049449  
 A1 20050303, 6 pp. (English). CODEN: USXXCO. APPLICATION: US  
 2004-916066 20040811. PRIORITY: US 2003-497728P 20030825.

AB This invention provides a method for stabilization of combined heavy

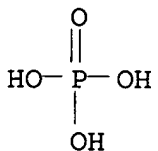
metal bearing materials and wastes subject to acid and water leaching tests or leach conditions by addn. of stabilizing agents such that the leaching potential is inhibited to desired levels and the material or waste is free flowing. The resultant material or waste after stabilization is deemed suitable for on-site reuse, off-site reuse or disposal as RCRA non-hazardous waste.

- IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7,  
Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate  
7664-38-2, Phosphoric acid, reactions  
7664-38-2D, Phosphoric acid, salts  
7757-93-9, Dicalcium phosphate 7758-11-4,  
Dipotassium hydrogen phosphate 7758-23-8, Monocalcium  
phosphate 7758-87-4, Calcium orthophosphate  
7778-53-2, Tripotassium phosphate 7778-77-0,  
Potassium dihydrogen phosphate 10377-52-3, Trilithium  
phosphate 13453-80-0, Lithium dihydrogen phosphate  
33943-39-4, Dilithium hydrogen phosphate  
(method using phosphate salt and complexing agent for chemiophys.  
stabilization of waste to prevent heavy metal leaching)
- RN 7558-79-4 HCA  
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



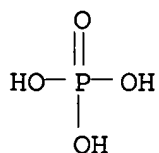
●2 Na

- RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



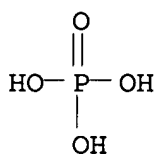
● Na

- RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

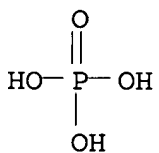


●3 Na

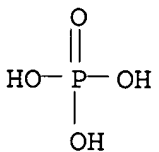
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

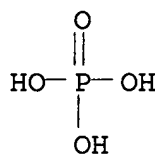


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

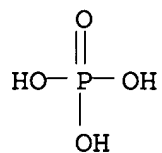
RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

RN 7758-23-8 HCA

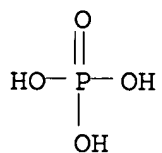
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●1/2 Ca

RN 7758-87-4 HCA

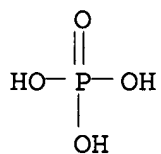
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●3/2 Ca

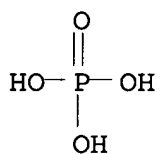
RN 7778-53-2 HCA

CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



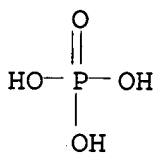
●3 K

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



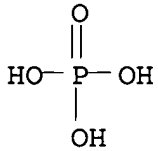
● K

RN 10377-52-3 HCA  
CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



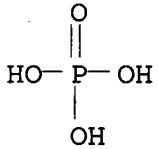
●3 Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



●2 Li

IC ICM B09B003-00  
INCL 588256000  
CC 60-4 (Waste Treatment and Disposal)  
Section cross-reference(s): 59  
IT **Fertilizers**  
(method using phosphate salt and complexing agent for chemiophys.  
stabilization of waste to prevent heavy metal leaching)  
IT **Fertilizers**  
(phosphorus; method using phosphate salt and complexing agent for  
chemiophys. stabilization of waste to prevent heavy metal leaching)  
IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7,  
Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate  
7664-38-2, **Phosphoric acid**, reactions  
7664-38-2D, **Phosphoric acid**, salts  
7705-08-0, Ferric chloride, reactions 7720-78-7, Ferrous sulfate  
7722-76-1, Monoammonium phosphate 7757-93-9, Dicalcium  
phosphate 7758-11-4, Dipotassium hydrogen phosphate  
7758-23-8, Monocalcium phosphate 7758-87-4, Calcium  
orthophosphate 7778-53-2, Tripotassium phosphate  
7778-77-0, Potassium dihydrogen phosphate 7783-28-0,  
Diammonium phosphate 10028-22-5, Ferric sulfate 10377-52-3  
, Trilithium phosphate 13453-80-0, Lithium dihydrogen  
phosphate 13478-98-3, Hexametaphosphate 33943-39-4,  
Dilithium hydrogen phosphate  
(method using phosphate salt and complexing agent for chemiophys.)

stabilization of waste to prevent heavy metal leaching)

L47 ANSWER 7 OF 56 HCA COPYRIGHT 2010 ACS on STN

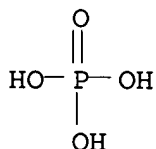
142:150263 Production and use of hydrolyzed urea condensates and salts as **fertilizers**, fungicides and insecticides. Blount, David H. (USA). U.S. Pat. Appl. Publ. US 20050019363 A1 20050127, 9 pp., Cont.-in-part of U.S. Ser. No. 941,402. (English). CODEN: USXXCO. APPLICATION: US 2004-922291 20040820. PRIORITY: US 2001-941402 20010830; US 2000-532646 20000322; US 1998-149847 19980908; US 1997-801776 19970214; US 1996-723779 19960930.

AB **Fertilizer**, fungicide and insecticide compns. are obtained by a process whereby partially hydrolyzed urea condensates are produced by heating urea with a limited amt. of water and continuing to heat until water reacts with the urea and the urea condensate with urea and the partially hydrolyzed urea. The partially hydrolyzed urea condensate may be used alone or may be mixed with or reacted with salt-forming compds. and mixed with fillers to produce partially hydrolyzed urea condensate compns. The partially hydrolyzed urea condensate salts of phosphorus-, boron- or sulfur-contg. compds. may also be used as the insecticide, fungicide, and **fertilizer** compds.

IT **16068-46-5P**, Potassium phosphate  
(filler; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)

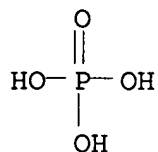


●x K

IT **7757-86-0DP**, Magnesium hydrogen phosphate, reaction products with hydrolyzed urea condensates **7758-11-4DP**, reaction products with hydrolyzed urea condensates **7778-77-0DP**, reaction products with hydrolyzed urea condensates (prodn. and utilization as **fertilizers**, fungicides and insecticides)

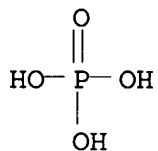
RN 7757-86-0 HCA

CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



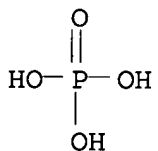
● Mg

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



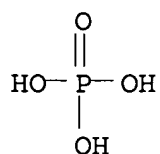
● 2 K

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IT 7664-38-2DP, Phosphoric acid, salts with  
hydrolyzed urea condensates  
(prodn. and utilization of hydrolyzed urea condensates and salts as  
**fertilizers**, fungicides and insecticides)  
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



IC ICM A01N043-54  
ICS A01N025-00  
INCL 424405000  
CC 5-4 (Agrochemical Bioregulators)  
Section cross-reference(s): 19, 38  
ST urea condensate hydrolyzate salt **fertilizer** fungicide  
insecticide  
IT Polyphosphates  
(amino, fillers; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)  
IT Sawdust  
(filler; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)  
IT Aminoplasts  
Borates  
Carbohydrates, biological studies  
Carbonates, biological studies  
Oxides (inorganic), biological studies  
Phenolic resins, biological studies  
Silicates, biological studies  
(filler; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)  
IT Phosphates, biological studies  
Phosphites  
Sulfates, biological studies  
(fillers; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)  
IT Fillers  
(for hydrolyzed urea condensates and salts as **fertilizers**  
, fungicides and insecticides)  
IT Glass beads  
(hollow glass beads, filler; prodn. and utilization as  
**fertilizers**, fungicides and insecticides)  
IT **Fertilizers**  
(nitrogen; prodn. and utilization of hydrolyzed urea condensates  
and salts as)  
IT Plastics, biological studies  
Polymers, biological studies  
(powd., fillers; prodn. and utilization as **fertilizers**,  
fungicides and insecticides)  
IT Alkali metal compounds  
Alkaline earth compounds  
Amines, biological studies

Polyphosphoric acids

(reaction products with hydrolyzed urea condensates; prodn. and utilization as **fertilizers**, fungicides and insecticides)

- IT 7782-42-5P, Graphite, biological studies  
(expandable, filler; prodn. and utilization as **fertilizers**, fungicides and insecticides)
- IT 57-13-6P, Urea, biological studies 62-56-6P, Thiourea, biological studies 108-78-1P, Melamine, biological studies 113-00-8P, Guanidine 461-58-5P, Dicyandiamide 506-87-6P, Ammonium carbonate 1309-64-4P, Antimony trioxide, biological studies 4401-74-5P 7773-06-0P, Ammonium sulfamate 7783-20-2P, Ammonium sulfate, biological studies 7784-30-7P, Aluminum phosphate 7786-30-3P, Magnesium chloride, biological studies 10124-31-9P, Ammonium phosphate 11128-98-6P, Ammonium borate **16068-46-5P**, Potassium phosphate 22690-73-9P, Ammonium pyrophosphate 37640-57-6P, Melamine cyanurate 41583-09-9P, Melamine phosphate 53587-44-3P, Melamine borate 100224-74-6P, Guanidine carbonate 561314-20-3P  
(filler; prodn. and utilization as **fertilizers**, fungicides and insecticides)
- IT 1344-09-8DP, Sodium silicate, Hydrated 1344-28-1DP, Aluminum oxide, Hydrated 7631-86-9P, Silica, biological studies 9003-35-4P, Phenol-formaldehyde resin 13308-51-5P, Boron phosphate 830336-38-4P 830336-39-5P  
(powder, filler; prodn. and utilization as **fertilizers**, fungicides and insecticides)
- IT 77-92-9DP, Citric acid, reaction products with hydrolyzed urea condensates 78-38-6DP, Diethyl ethylphosphonate, reaction products with hydrolyzed urea condensates 101-02-0DP, Triphenyl phosphite, reaction products with hydrolyzed urea condensates 108-78-1DP, Melamine, hydrogen boron phosphate deriv., reaction products with hydrolyzed urea condensates 121-45-9DP, Trimethyl phosphite, reaction products with hydrolyzed urea condensates 122-52-1DP, Triethyl phosphite, reaction products with hydrolyzed urea condensates 140-08-9DP, Tris(2-chloroethyl) phosphite, reaction products with hydrolyzed urea condensates 701-64-4DP, Phenyl acid phosphate, reaction products with hydrolyzed urea condensates 756-79-6DP, Dimethyl methylphosphonate, reaction products with hydrolyzed urea condensates 756-80-9DP, O,O-Dimethyl hydrogen dithiophosphate, reaction products with hydrolyzed urea condensates 762-04-9DP, Diethyl phosphite, reaction products with hydrolyzed urea condensates 813-78-5DP, reaction products with hydrolyzed urea condensates 868-85-9DP, Dimethyl hydrogen phosphite, reaction products with hydrolyzed urea condensates 1310-58-3DP, Potassium hydroxide, reaction products with hydrolyzed urea condensates 1314-56-3DP, Phosphorus oxide, reaction products with hydrolyzed urea condensates 1336-21-6DP, Ammonium hydroxide, reaction products with hydrolyzed urea condensates 1763-07-1DP, reaction products with hydrolyzed urea condensates 2466-09-3DP, Pyrophosphoric acid, reaction products with hydrolyzed urea condensates 3982-91-0DP, Phosphorus thiochloride, reaction products with hydrolyzed urea condensates 4401-74-5DP,

diethyltriamine, reaction products with hydrolyzed urea condensates 4861-19-2DP, Urea dihydrogen phosphate, reaction products with hydrolyzed urea condensates 6145-73-9DP, Tris(2-chloropropyl) phosphate, reaction products with hydrolyzed urea condensates 6303-21-5DP, Phosphinic acid, reaction products with hydrolyzed urea condensates 7440-42-8DP, Boron, compds., reaction products with hydrolyzed urea condensates 7664-41-7DP, Ammonia, reaction products with hydrolyzed urea condensates 7664-93-9DP, Sulfuric acid, reaction products with hydrolyzed urea condensates 7704-34-9DP, Sulfur, compds., reaction products with hydrolyzed urea condensates 7719-12-2DP, Phosphorus trichloride, reaction products with hydrolyzed urea condensates 7722-76-1DP, Ammonium dihydrogen phosphate, reaction products with hydrolyzed urea condensates 7723-14-0DP, Phosphorus, reaction products with hydrolyzed urea condensates 7757-86-0DP, Magnesium hydrogen phosphate, reaction products with hydrolyzed urea condensates 7758-11-4DP, reaction products with hydrolyzed urea condensates 7778-77-0DP, reaction products with hydrolyzed urea condensates 7783-28-0DP, Ammonium hydrogen phosphate, reaction products with hydrolyzed urea condensates 7784-30-7DP, Monoaluminum phosphate, reaction products with hydrolyzed urea condensates 7803-60-3DP, Hypophosphoric acid, reaction products with hydrolyzed urea condensates 10025-87-3DP, Phosphorus oxytrichloride, reaction products with hydrolyzed urea condensates 10043-35-3DP, Boric acid, reaction products with hydrolyzed urea condensates 13446-12-3P, Monoammonium phosphite 13598-36-2DP, Phosphorous acid, reaction products with hydrolyzed urea condensates 13840-40-9DP, Phosphine oxide, reaction products with hydrolyzed urea condensates 20502-96-9DP, reaction products with hydrolyzed urea condensates 22132-71-4P 25756-87-0DP, Phosphinous acid, reaction products with hydrolyzed urea condensates 26071-57-8DP, Aminoguanidine phosphate, reaction products with hydrolyzed urea condensates 28901-77-1DP, reaction products with hydrolyzed urea condensates 39355-55-0DP, reaction products with hydrolyzed urea condensates 41583-09-9DP, reaction products with hydrolyzed urea condensates 53749-55-6DP, reaction products with hydrolyzed urea condensates 56974-60-8DP, Dimelamine phosphate, reaction products with hydrolyzed urea condensates 63175-05-3DP, Dicyandiamide phosphate, reaction products with hydrolyzed urea condensates 85068-66-2DP, reaction products with hydrolyzed urea condensates 151705-55-4DP, reaction products with hydrolyzed urea condensates 211302-83-9DP, reaction products with hydrolyzed urea condensates 211302-87-3DP, reaction products with hydrolyzed urea condensates 211302-88-4P 561314-29-2DP, reaction products with hydrolyzed urea condensates 561314-31-6DP, reaction products with hydrolyzed urea condensates 830336-40-8DP, reaction products with hydrolyzed urea condensates 830336-41-9DP, reaction products with hydrolyzed urea condensates 830336-42-0DP, reaction products with hydrolyzed urea condensates

(prodn. and utilization as **fertilizers**, fungicides and insecticides)

IT 57-13-6DP, Urea, hydrolyzed condensation products and salts

**7664-38-2DP, Phosphoric acid, salts with hydrolyzed urea condensates**  
(prodn. and utilization of hydrolyzed urea condensates and salts as **fertilizers, fungicides and insecticides**)

L47 ANSWER 8 OF 56 HCA COPYRIGHT 2010 ACS on STN

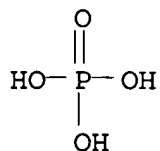
142:110119 Recalcification stimulants. Sakamoto, Reiichiro; Sunada, Yoshikazu; Kimura, Toshiyuki; Uotsu, Nobuo; Koseki, Akiko; Suda, Yuko (Oji Paper Co., Ltd., Japan). PCT Int. Appl. WO 2005003753 A1 20050113, 74 pp. (Japanese). APPLICATION: WO 2004-JP9443 20040702. PRIORITY: JP 2003-193100 20030707.

AB A substance or compn. having a function of keeping metal ions such as Ca ions in a sol. state and a function of stimulating recalcification and repairing tooth decay at its early stage is utilized in foods, drinks, seasonings, taste-improving agents, oral hygiene products, detergents, metal suppliers, metal absorption stimulants, cosmetics, feeds or **fertilizers**. The remineralization stimulant provided in this invention is a compn. contg. at least one substance selected from a group consisting of starch phosphate, maltodextrin phosphate, reduced maltodextrin phosphate, oligosaccharide phosphate, reduced oligosaccharide phosphate, org. acids and carbohydrates, and having a function of exerting a calcium deposition ratio of 5% or higher, preferably 10% or higher, in a specific remineralization test reaction. Also provided are foods, drinks, seasonings, taste-improving agents, oral hygiene products, detergents, metal suppliers, metal absorption stimulants, cosmetics, feeds or **fertilizers**, which are characterized by contg. the above-described remineralization stimulant.

IT **10103-46-5, Calcium phosphate**  
(recalcification stimulants for repairing tooth decay)

RN 10103-46-5 HCA

CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)

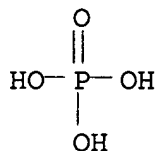


●x Ca

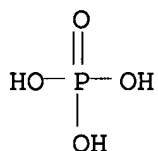
IT **7664-38-2, Phosphoric acid, reactions**  
**7664-38-2D, Phosphoric acid, salt**  
**7778-77-0, Potassium dihydrogen phosphate**  
(recalcification stimulants for repairing tooth decay)

RN 7664-38-2 HCA

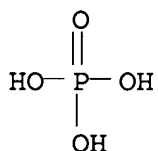
CN Phosphoric acid (CA INDEX NAME)



RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC ICM G01N031-00  
ICS A23L001-03; A23L001-22  
CC 9-16 (Biochemical Methods)  
Section cross-reference(s): 17, 62, 63  
IT **Fertilizers**  
(recalcification stimulants for repairing tooth decay)  
IT 1306-06-5, Hydroxylapatite (Ca<sub>5</sub>(OH)(PO<sub>4</sub>)<sub>3</sub>) 7440-70-2, Calcium,  
processes 10103-46-5, Calcium phosphate  
(recalcification stimulants for repairing tooth decay)  
IT 7664-38-2, Phosphoric acid, reactions  
7664-38-2D, Phosphoric acid, salt  
7778-77-0, Potassium dihydrogen phosphate 9005-25-8, Starch,  
reactions 9005-25-8D, Starch, decompn. product 10043-52-4, Calcium  
chloride, reactions  
(recalcification stimulants for repairing tooth decay)  
L47 ANSWER 9 OF 56 HCA COPYRIGHT 2010 ACS on STN  
141:123166 Soluble **fertilizer** compositions comprising calcium  
and/or magnesium phosphates and alkali metal double phosphates.  
Josef, Alexander; Tubov, Shula (Rotem Amfert Negev Ltd., Israel;

Zukerman, Itshak). PCT Int. Appl. WO 2004063126 A1 20040729, 15 pp.  
APPLICATION: WO 2004-IL41 20040115. PRIORITY: IL 2003-154007 20030116.

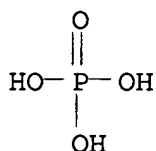
AB The invention provides **fertilizer** compns. comprising calcium and/or magnesium phosphate, an alkali metal phosphate, preferably monopotassium phosphate, and **phosphoric acid**.

During processing, the alkali metal phosphate reacts with **phosphoric acid**, to give an alkali metal double phosphate. The solid compn. is free-flowing and sol.

IT **7664-38-2, Phosphoric acid**, biological studies **7778-77-0**, Monopotassium phosphate (in manuf. of sol. **fertilizer** compns. comprising calcium and/or magnesium phosphates and alkali metal double phosphates)

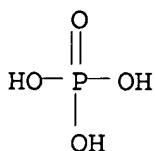
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



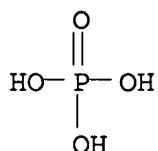
● K

IT **7757-86-0 7757-93-9**

(sol. **fertilizer** compns. comprising calcium and/or magnesium phosphates and alkali metal double phosphates)

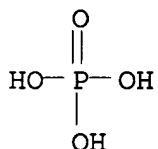
RN 7757-86-0 HCA

CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



● Mg

RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)

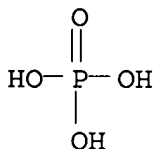


● Ca

IC ICM C05B007-00  
ICS C05B009-00; C05B021-00  
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
ST **fertilizer** compn calcium magnesium phosphate alkali metal double salt  
IT **Fertilizers**  
(manuf. of sol. **fertilizer** compns. comprising calcium and/or magnesium phosphates and alkali metal double phosphates)  
IT 7664-38-2, **Phosphoric acid**, biological studies 7778-77-0, Monopotassium phosphate  
(in manuf. of sol. **fertilizer** compns. comprising calcium and/or magnesium phosphates and alkali metal double phosphates)  
IT 7757-86-0 7757-93-9  
(sol. **fertilizer** compns. comprising calcium and/or magnesium phosphates and alkali metal double phosphates)  
L47 ANSWER 10 OF 56 HCA COPYRIGHT 2010 ACS on STN  
141:27525 Heavy metal particulate (HMP) emission speciation modification process. Forrester, Keith Edward (USA). U.S. Pat. Appl. Publ. US 20040116766 A1 20040617, 8 pp., Cont.-in-part of U.S. Ser. No. 189,828, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2003-690202 20031021. PRIORITY: US 2002-189828 20020708; US 2002-419861P 20021021.  
AB The invention pertains to a method for reducing the leaching of heavy metals from air, water and wastewater particulate emissions. The

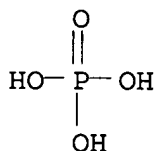
method includes contacting the heavy metal particulate with a complexing agent which converts the mol. form of the particulate to a less sol. and less bioavailable form prior to collection and release to the environment. This method eliminates the need to remove or treat soils and environments exposed to particulate deposition and greatly reduces the environmental and health risks assocd. with the deposition of heavy metal particulate in the open environment as well as at controlled discharge areas.

IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7,  
Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate  
7664-38-2D, **Phosphoric acid**, salts  
7757-93-9, Dicalcium phosphate 7758-11-4,  
Dipotassium hydrogen phosphate 7758-23-8, Monocalcium  
phosphate 7758-87-4, Calcium orthophosphate  
7778-53-2, Tripotassium phosphate 7778-77-0,  
Potassium dihydrogen phosphate 10377-52-3, Trilithium  
phosphate 13453-80-0, Lithium dihydrogen phosphate  
33943-39-4, Dilithium hydrogen phosphate  
(heavy metal particulate emission speciation modification process)  
RN 7558-79-4 HCA  
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



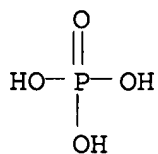
●2 Na

RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



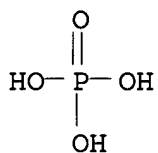
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

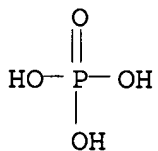


●3 Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

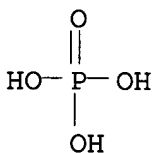


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

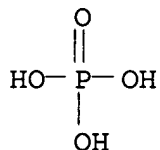
RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

RN 7758-23-8 HCA

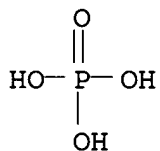
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●1/2 Ca

RN 7758-87-4 HCA

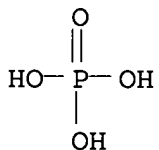
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●3/2 Ca

RN 7778-53-2 HCA

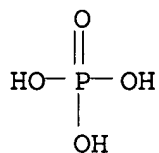
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●3 K

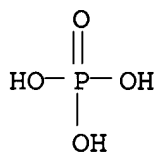
RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



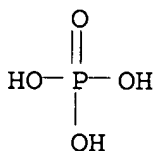
● K

RN 10377-52-3 HCA  
CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



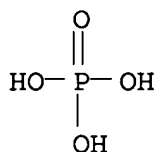
●<sub>3</sub> Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



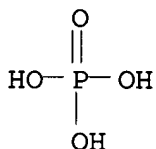
● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



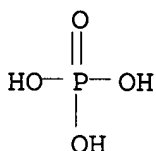
●2 Li

IT 7664-38-2, **Phosphoric acid**, uses  
 (including wet process green or amber **phosphoric acid**, coproduct **phosphoric acid** soln.  
 from aluminum polishing or tech. grade **phosphoric acid**; heavy metal particulate emission speciation  
 modification process)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



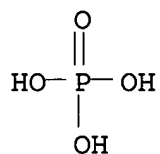
IC ICM A62D003-00  
 INCL 588256000  
 CC 59-2 (Air Pollution and Industrial Hygiene)  
 IT **Fertilizers**  
 (phosphorus; heavy metal particulate emission speciation  
 modification process)  
 IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide, uses  
 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-42-8, Boron,  
 uses 7440-62-2, Vanadium, uses 7440-70-2, Calcium, uses  
 7447-40-7, Potassium chloride, uses **7558-79-4**, Disodium  
 hydrogen phosphate **7558-80-7**, Sodium dihydrogen phosphate  
**7601-54-9**, Trisodium phosphate 7647-14-5, Sodium chloride,  
 uses **7664-38-2D**, **Phosphoric acid**, salts  
 7681-11-0, Potassium iodide, uses 7705-08-0, Ferric chloride, uses  
 7722-64-7, Potassium permanganate 7722-76-1, Monoammonium phosphate  
**7757-93-9**, Dicalcium phosphate **7758-11-4**,  
 Dipotassium hydrogen phosphate **7758-23-8**, Monocalcium  
 phosphate **7758-87-4**, Calcium orthophosphate  
**7778-53-2**, Tripotassium phosphate **7778-77-0**,  
 Potassium dihydrogen phosphate 7783-28-0, Diammonium phosphate  
 10028-22-5, Ferric sulfate 10043-01-3, Aluminum sulfate  
 10043-52-4, Calcium chloride, uses **10377-52-3**, Trilithium  
 phosphate **13453-80-0**, Lithium dihydrogen phosphate

- 13478-98-3, Hexametaphosphate 20461-54-5, Iodide, uses  
 33943-39-4, Dilithium hydrogen phosphate  
 (heavy metal particulate emission speciation modification process)
- IT 7664-38-2, **Phosphoric acid**, uses  
 (including wet process green or amber **phosphoric acid**, coproduct **phosphoric acid** soln. from aluminum polishing or tech. grade **phosphoric acid**; heavy metal particulate emission speciation modification process)
- L47 ANSWER 11 OF 56 HCA COPYRIGHT 2010 ACS on STN  
 140:168894 Method for stabilization of material or waste to reduce metals and fluoride leaching potential. Forrester, Keith Edward (USA). U.S. Pat. Appl. Publ. US 20040024281 A1 20040205, 5 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-212025 20020805.
- AB This invention provides a method for chem. stabilization of heavy metal bearing materials and wastes while minimizing fluoride soly. subject to acid and water leaching tests or leach conditions by addn. of stabilizing agents such that the leaching potential is inhibited to desired levels. The resultant material or waste after stabilization is deemed suitable for on-site reuse, off-site reuse or disposal as non-hazardous waste.
- IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2, **Phosphoric acid**, uses 7664-38-2D, **Phosphoric acid**, salts 7757-93-9, Dicalcium phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium orthophosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 10377-52-3, Trilithium phosphate 13453-80-0, Lithium dihydrogen phosphate 33943-39-4, Dilithium hydrogen phosphate (stabilizing agent; method for stabilization of material or waste to reduce metals and fluoride leaching potential)
- RN 7558-79-4 HCA  
 CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



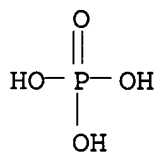
●2 Na

- RN 7558-80-7 HCA  
 CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



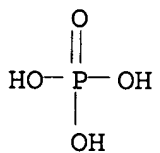
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

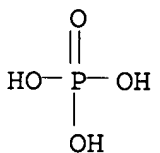


●3 Na

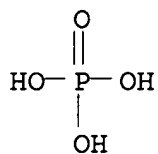
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

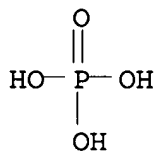


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



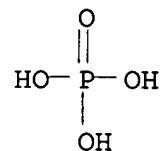
● Ca

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



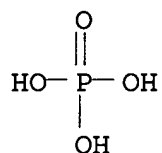
● 2 K

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

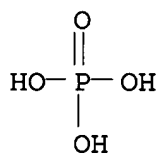
RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●<sub>3/2</sub> Ca

RN 7778-53-2 HCA

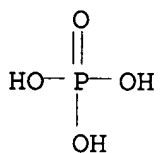
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●<sub>3</sub> K

RN 7778-77-0 HCA

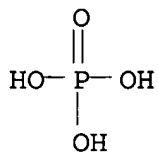
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

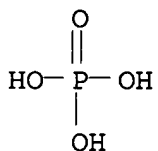
RN 10377-52-3 HCA

CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



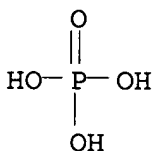
●3 Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



●2 Li

IC ICM A62D003-00  
INCL 588256000  
CC 60-5 (Waste Treatment and Disposal)  
IT **Fertilizers**  
(phosphorus, stabilizing agent; method for stabilization of material or waste to reduce metals and fluoride leaching potential)  
IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2, Phosphoric acid, uses 7664-38-2D, Phosphoric acid, salts 7722-76-1, Monoammonium phosphate 7757-93-9, Dicalcium

phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium orthophosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 7783-28-0, Diammonium phosphate 10377-52-3, Trilithium phosphate 13396-41-3 13453-80-0, Lithium dihydrogen phosphate 13478-98-3, Hexametaphosphate 33943-39-4, Dilithium hydrogen phosphate

(stabilizing agent; method for stabilization of material or waste to reduce metals and fluoride leaching potential)

L47 ANSWER 12 OF 56 HCA COPYRIGHT 2010 ACS on STN

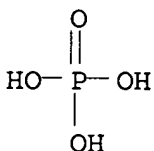
140:168874 Method for stabilization of material or waste to reduce combined metals leaching potential. Forrester, Keith Edward (USA). U.S. Pat. Appl. Publ. US 20040034267 A1 20040219, 5 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-223113 20020819.

AB This invention provides a method for chem. stabilization of combined heavy metal bearing materials and wastes subject to acid and water leaching tests or leach conditions by addn. of stabilizing agents such that the leaching potential is inhibited to desired levels. The resultant material or waste after stabilization is deemed suitable for on-site reuse, off-site reuse or disposal as RCRA non-hazardous waste.

IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2, Phosphoric acid, uses 7664-38-2D, Phosphoric acid, salts 7757-93-9, Dicalcium phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium orthophosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 10377-52-3, Trilithium phosphate 13453-80-0, Lithium dihydrogen phosphate 33943-39-4, Dilithium hydrogen phosphate (stabilizing agent; method for stabilization of material or waste to reduce combined metals leaching potential)

RN 7558-79-4 HCA

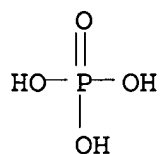
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



●2 Na

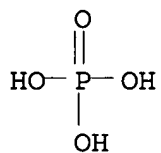
RN 7558-80-7 HCA

CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



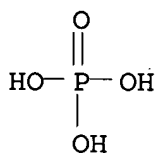
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

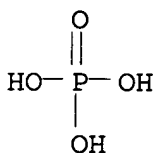


●3 Na

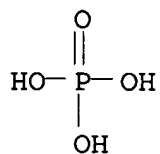
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

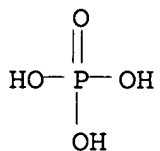


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



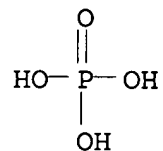
/ ● Ca

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



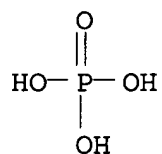
●2 K

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●1/2 Ca

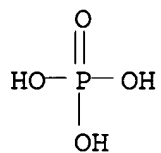
RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●<sub>3/2</sub> Ca

RN 7778-53-2 HCA

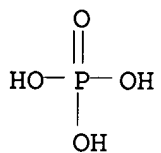
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●<sub>3</sub> K

RN 7778-77-0 HCA

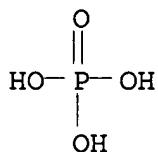
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

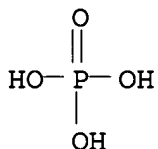
RN 10377-52-3 HCA

CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



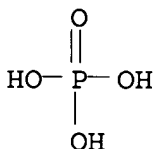
●3 Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



●2 Li

IC ICM A62D003-00  
INCL 588256000  
CC 60-2 (Waste Treatment and Disposal)  
IT **Fertilizers**  
(phosphorus, stabilizing agent; method for stabilization of material or waste to reduce combined metals leaching potential)  
IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-42-8, Boron, uses 7440-62-2, Vanadium, uses 7447-40-7, Potassium chloride, uses 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate 7647-14-5, Sodium chloride, uses 7664-38-2,

**Phosphoric acid, uses 7664-38-2D,**  
**Phosphoric acid, salts 7722-76-1, Monoammonium**  
**phosphate 7757-93-9, Dicalcium phosphate 7758-11-4**  
**, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium**  
**phosphate 7758-87-4, Calcium orthophosphate**  
**7778-53-2, Tripotassium phosphate 7778-77-0,**  
**Potassium dihydrogen phosphate 7783-28-0, Diammonium phosphate**  
**10043-52-4, Calcium chloride, uses 10377-52-3, Trilithium**  
**phosphate 13453-80-0, Lithium dihydrogen phosphate**  
**13478-98-3, Hexametaphosphate 33943-39-4, Dilithium hydrogen**  
**phosphate**  
 (stabilizing agent; method for stabilization of material or waste  
 to reduce combined metals leaching potential)

L47 ANSWER 13 OF 56 HCA COPYRIGHT 2010 ACS on STN

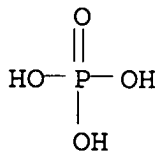
140:151142 Method for wet stabilization of material or waste to reduce  
 selenium leaching potential. Forrester, Keith Edward (USA). U.S.  
 Pat. Appl. Publ. US 20040018130 A1 20040129, 5 pp. (English). CODEN:  
 USXXCO. APPLICATION: US 2002-200624 20020723.

AB This invention provides a method for chem. stabilization of selenium  
 bearing materials and wastes subject to acid and water leaching tests  
 or leach conditions by addn. of water and selenium stabilizing agents  
 such that the leaching potential is inhibited to desired levels. The  
 resultant material or waste after stabilization is deemed suitable for  
 on-site reuse, off-site reuse or disposal as RCRA non-hazardous waste.

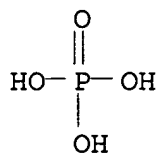
IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7,  
 Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate  
 7664-38-2, **Phosphoric acid, uses**  
**7664-38-2D, Phosphoric acid, salts**  
**7757-93-9, Dicalcium phosphate 7758-11-4,**  
**Dipotassium hydrogen phosphate 7758-23-8, Monocalcium**  
**phosphate 7758-87-4, Calcium orthophosphate**  
**7778-53-2, Tripotassium phosphate 7778-77-0,**  
**Potassium dihydrogen phosphate 10377-52-3, Trilithium**  
**phosphate 13453-80-0, Lithium dihydrogen phosphate**  
**33943-39-4, Dilithium hydrogen phosphate**  
 (selenium stabilizing agent; method for wet stabilization of  
 material or waste to reduce selenium leaching potential)

RN 7558-79-4 HCA

CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)

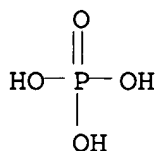


RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



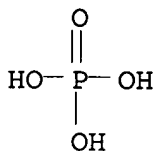
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

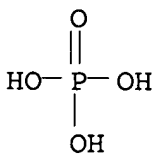


●3 Na

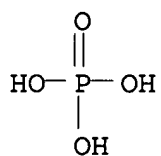
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



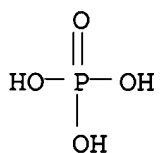
RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

RN 7758-11-4 HCA

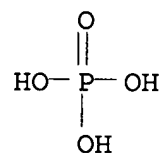
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



● 2 K

RN 7758-23-8 HCA

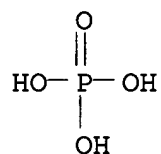
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7758-87-4 HCA

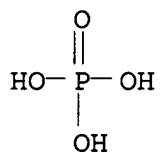
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●<sub>3/2</sub> Ca

RN 7778-53-2 HCA

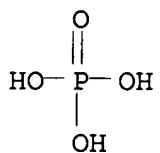
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●<sub>3</sub> K

RN 7778-77-0 HCA

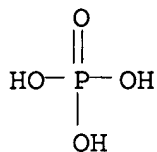
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

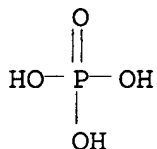
RN 10377-52-3 HCA

CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



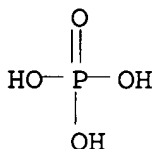
●3 Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



●2 Li

IC ICM B01D011-02  
INCL 422261000  
CC 60-5 (Waste Treatment and Disposal)  
Section cross-reference(s): 59  
IT **Fertilizers**  
(phosphorus, selenium stabilizing agent; method for wet  
stabilization of material or waste to reduce selenium leaching  
potential)  
IT 7558-79-4, Disodium hydrogen phosphate 7558-80-7,  
Sodium dihydrogen phosphate 7601-54-9, Trisodium phosphate  
7664-38-2, Phosphoric acid, uses

**7664-38-2D, Phosphoric acid, salts**

7722-76-1, Monoammonium phosphate 7757-93-9, Dicalcium phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium orthophosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 7783-28-0, Diammonium phosphate 10377-52-3, Trilithium phosphate 13453-80-0, Lithium dihydrogen phosphate 13478-98-3, Hexametaphosphate 33943-39-4, Dilithium hydrogen phosphate (selenium stabilizing agent; method for wet stabilization of material or waste to reduce selenium leaching potential)

L47 ANSWER 14 OF 56 HCA COPYRIGHT 2010 ACS on STN

140:113725 Lead projectile mineral coating. Forrester, Keith E. (USA). U.S. Pat. Appl. Publ. US 20040024283 A1 20040205, 7 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-209517 20020730.

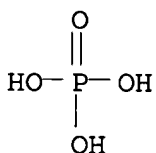
AB Reducing the leaching of lead from the surface of a lead projectiles (e.g., lead shot from hunting and shooting ranges) consists of contacting the lead projectile surface with one or more lead stabilizing agents in an amt. to reduce the leached lead content to  $\leq 5.0$  ppm (ASTM TCLP test) in lead-contaminated soils or lead-contaminated materials (i.e., from projectile impact), as set forth in the Federal Register, Vol. 55, no. 126, p. 26985-26998 (June 29, 1990). The lead stabilizing agent is selected from phosphates and **phosphoric acid**, hypophosphoric acid, metaphosphoric acid, hexametaphosphates, polyphosphates, phosphate **fertilizer**, dolomitic limestone, magnesium oxide, limestone, calcium oxide, calcium carbonate, silicates and metasilicates, and bone meal. This method eliminates the need to remove or re-treat range soils and greatly reduces the environmental and health risks assocd. with the use of lead as projectiles in the open environment as well as at control trap ranges.

IT **7664-38-2, Phosphoric acid, uses**

(coating; phosphate-based mineral coatings for lead-based projectiles for leaching prevention during hunting and in shooting ranges)

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

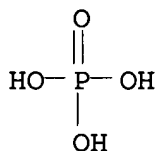


IT **7558-79-4, Disodium hydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2D, Phosphoric acid, alkali metal salts 7757-93-9, Dicalcium phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium**

orthophosphate 7778-53-2, Tripotassium phosphate  
 7778-77-0, Potassium dihydrogen phosphate 10377-52-3  
 , Trilithium phosphate 13453-80-0, Lithium dihydrogen  
 phosphate 33943-39-4, Dilithium hydrogen phosphate  
 (coatings; phosphate-based mineral coatings for lead-based  
 projectiles for leaching prevention during hunting and in shooting  
 ranges)

RN 7558-79-4 HCA

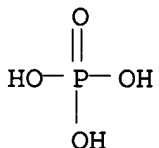
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 7601-54-9 HCA

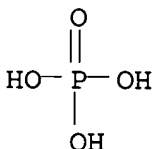
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



●3 Na

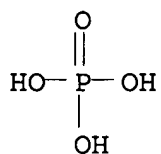
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



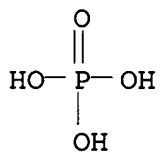
RN 7757-93-9 HCA

CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



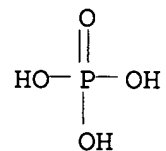
● Ca

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



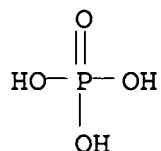
● 2 K

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

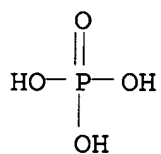
RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●<sub>3/2</sub> Ca

RN 7778-53-2 HCA

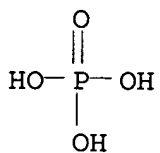
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●<sub>3</sub> K

RN 7778-77-0 HCA

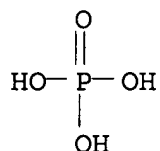
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

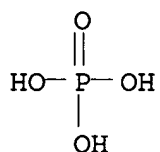
RN 10377-52-3 HCA

CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



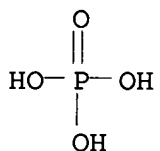
●3 Li

RN 13453-80-0 HCA  
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA  
CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)



●2 Li

IC ICM A62D003-00  
INCL 588259000  
CC 50-8 (Propellants and Explosives)  
Section cross-reference(s): 19, 61  
IT **Fertilizers**  
(phosphorus, coatings; phosphate-based mineral coatings for lead-based projectiles for leaching prevention during hunting and in shooting ranges)  
IT 7664-38-2, **Phosphoric acid**, uses  
(coating; phosphate-based mineral coatings for lead-based projectiles for leaching prevention during hunting and in shooting

ranges)  
 IT 471-34-1, Calcium carbonate, uses 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide, uses 1312-76-1, Potassium silicate 2466-09-3, Pyrophosphoric acid 6834-92-0, Sodium metasilicate 7558-79-4, Disodium hydrogen phosphate 7601-54-9, Trisodium phosphate 7664-38-2D, **Phosphoric acid**, alkali metal salts 7722-76-1, Monoammonium phosphate 7757-93-9, Dicalcium phosphate 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Calcium orthophosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 7783-28-0, Diammonium phosphate 7803-60-3, Hypophosphoric acid 10343-62-1, Metaphosphoric acid 10377-52-3, Trilithium phosphate 13453-80-0, Lithium dihydrogen phosphate 18694-07-0D, Hexametaphosphoric acid, salts 33943-39-4, Dilithium hydrogen phosphate (coatings; phosphate-based mineral coatings for lead-based projectiles for leaching prevention during hunting and in shooting ranges)

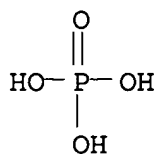
L47 ANSWER 15 OF 56 HCA COPYRIGHT 2010 ACS on STN  
 140:81209 Heavy metal particulate (HMP) emission speciation modification process. Forrester, Keith Edward (USA). U.S. Pat. Appl. Publ. US 20040006253 A1 20040108, 6 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-189828 20020708.

AB The invention pertains to a method for reducing the leaching of heavy metals from air, water and wastewater particulate emissions. The method includes contacting the heavy metal particulate with a complexing agent which converts the mol. form of the particulate to a less sol. and less bioavailable form prior to release to the environment. This method eliminates the need to remove or treat soils and environments exposed to particulate deposition and greatly reduces the environmental and health risks assocd. with the deposition of heavy metal particulate in the open environment as well as at controlled discharge areas.

IT 7558-79-4, Disodium phosphate 7558-80-7, Sodium dihydrogen phosphate 7664-38-2D, **Phosphoric acid**, alkali metal salts 7758-11-4, Dipotassium hydrogen phosphate 7778-53-2, Tripotassium phosphate 7778-77-0, Potassium dihydrogen phosphate 10377-52-3, Trilithium phosphate 13453-80-0, Lithium dihydrogen phosphate 33943-39-4, Dilithium hydrogen phosphate (complexing agent; heavy metal particulate (HMP) emission speciation modification process)

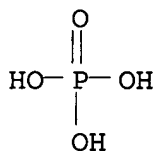
RN 7558-79-4 HCA

CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



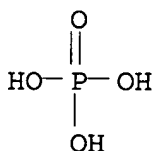
●2 Na

RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)

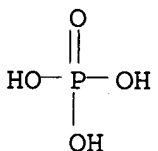


● Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



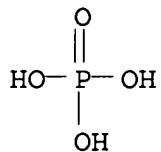
RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

RN 7778-53-2 HCA

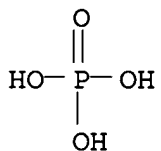
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●3 K

RN 7778-77-0 HCA

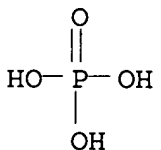
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

RN 10377-52-3 HCA

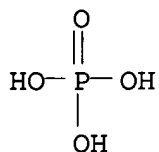
CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)



●3 Li

RN 13453-80-0 HCA

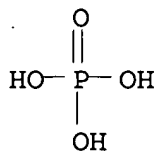
CN Phosphoric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 33943-39-4 HCA

CN Phosphoric acid, dilithium salt (8CI, 9CI) (CA INDEX NAME)

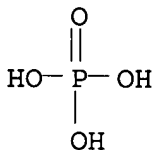


●2 Li

IT 7601-54-9, Trisodium phosphate 7664-38-2,  
**Phosphoric acid**, uses 7757-93-9, Dicalcium  
 phosphate 7758-23-8, Monocalcium phosphate 7758-87-4  
 , Calcium orthophosphate  
 (complexing agent; heavy metal particulate emission speciation  
 modification process)

RN 7601-54-9 HCA

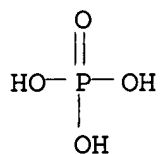
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



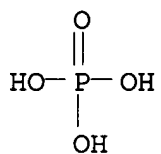
●3 Na

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

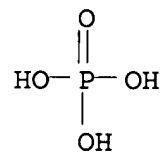


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



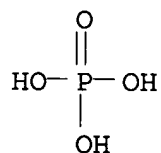
● Ca

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



● 3/2 Ca

IC ICM A62D003-00

INCL 588256000

CC 59-2 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 60, 61

IT **Fertilizers**

(phosphorus, complexing agent; heavy metal particulate emission speciation modification process)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide, uses 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-42-8, Boron, uses 7440-62-2, Vanadium, uses 7440-70-2, Calcium, uses 7447-40-7, Potassium chloride, uses **7558-79-4**, Disodium phosphate **7558-80-7**, Sodium dihydrogen phosphate 7647-14-5, Sodium chloride, uses **7664-38-2D**,

**Phosphoric acid**, alkali metal salts

**7758-11-4**, Dipotassium hydrogen phosphate **7778-53-2**,

Tripotassium phosphate **7778-77-0**, Potassium dihydrogen

phosphate 10043-52-4, Calcium chloride, uses **10377-52-3**,

Trilithium phosphate **13453-80-0**, Lithium dihydrogen

phosphate **33943-39-4**, Dilithium hydrogen phosphate

(complexing agent; heavy metal particulate (HMP) emission speciation modification process)

IT **7601-54-9**, Trisodium phosphate **7664-38-2**,

**Phosphoric acid**, uses 7722-76-1, Monoammonium

phosphate **7757-93-9**, Dicalcium phosphate **7758-23-8**

, Monocalcium phosphate **7758-87-4**, Calcium orthophosphate

**7783-28-0**, Diammonium phosphate 13478-98-3, Hexametaphosphate

14265-44-2, Phosphate, uses

(complexing agent; heavy metal particulate emission speciation modification process)

L47 ANSWER 16 OF 56 HCA COPYRIGHT 2010 ACS on STN

138:4139 Soil compositions containing ceramic particles with phosphate **fertilizers** for growing plants. Igami, Hideo; Igami, Minoru (Clay Ban Gijutsu Kenkyusho K. K., Japan; Nihon Clayban K. K.; Green Grove Y. K.). Jpn. Kokai Tokkyo Koho JP 2002348171 A **20021204**, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-156189 20010525.

AB A ceramic material of which ceramic particles are fused has air spaces  $\geq 1$  mm, and porosity being  $\geq 60$  % is suitable for maintaining water and as an additive to soil for growing plants. This material is made into the form of a plate or block. The product may contain calcium phosphate, potassium phosphate and alkali phosphate sol. in a weakly acidic medium.

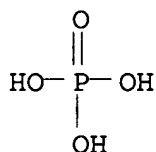
IT **7664-38-2D**, **Phosphoric acid**, salts

**10103-46-5**, Calcium phosphate **16068-46-5**, Potassium phosphate

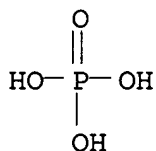
(fused ceramic particles contg. phosphates for growing plants)

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

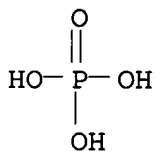


RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA  
CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

IC ICM C04B035-00  
ICS A01G001-00; C04B033-13; C04B038-00  
CC 19-2 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 57  
ST soil additive ceramic phosphate **fertilizer**  
IT Ceramics  
(fused ceramic particles contg. phosphates as **fertilizers**  
for growing plants)  
IT **Fertilizers**  
(fused ceramic particles contg. phosphates as **fertilizers**  
for growing plants)  
IT 7664-38-2D, **Phosphoric acid, salts**  
10103-46-5, Calcium phosphate 16068-46-5, Potassium  
phosphate  
(fused ceramic particles contg. phosphates for growing plants)

L47 ANSWER 17 OF 56 HCA COPYRIGHT 2010 ACS on STN

137:176191 Apatite conversion for decreasing the leachability and solubility of radionuclides and radioactive substances in contaminated soils and materials. Pal, Dhiraj; Yost, Karl W.; Chisick, Steven A. (Sevenson Environmental Services, Inc., USA). U.S. Pat. Appl. Publ. US 20020111525 A1 **20020815**, 25 pp., Cont.-in-part of U.S. Ser. No. 426,364. (English). CODEN: USXXCO. APPLICATION: US 2001-902533 20010709. PRIORITY: US 1990-494774 19900316; US 1991-721935 19910723; US 1993-31461 19930315; US 1996-663692 19960614; US 1997-942803 19971002; US 1997-953568 19971017; US 1999-340898 19990628; US 1999-426364 19991025.

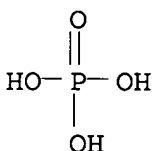
AB A process for chem. fixation of radionuclides and radioactive compds. present in soils, solid materials, sludges and liqs. is described. Radionuclides and other radioactive compds. are converted to low-temp. apatite-group structural isomorphs with the general compn., (AB)5(XO4)3Z, usually phosphatic, that are insol., nonleachable, nonzeolitic, and pH stable, by contact with a suspension contg. a sulfate, hydroxide, chloride, fluoride and/or silicate source as well as a phosphate anion. The apatitic-structure end product is chem. altered from the initial material and reduced in vol. and mass. The end product contains no free liqs. and has a sufficiently high level of thermal stability to be effective in the presence of heat generating nuclear reactions. The process occurs at ambient temp. and pressure.

IT **7601-54-9**, Trisodium phosphate **7664-38-2**,  
**Phosphoric acid**, processes **7758-23-8**  
**16068-46-5**, Potassium phosphate

(apatite conversion for decreasing leachability and soly. of radionuclides and radioactive substances in contaminated soils and materials)

RN 7601-54-9 HCA

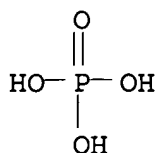
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



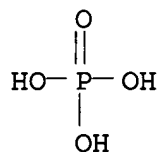
●3 Na

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

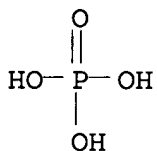


RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●<sub>1/2</sub> Ca

RN 16068-46-5 HCA  
CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●<sub>x</sub> K

IC ICM C22B060-02  
INCL 588013000  
CC 71-10 (Nuclear Technology)  
Section cross-reference(s): 19, 60  
IT 1305-78-8, Calcium oxide, processes 1327-43-1, Magnesium aluminum silicate 7439-95-4, Magnesium, processes 7601-54-9, Trisodium phosphate 7664-38-2, **Phosphoric acid**, processes 7722-88-5, Tetrasodium pyrophosphate 7757-82-6, Sodium sulfate, processes 7758-23-8 7778-80-5, Potassium sulfate, processes 10124-31-9, Ammonium phosphate 13397-24-5, Gypsum, processes 14265-44-2, Phosphate, processes 16068-46-5, Potassium phosphate  
(apatite conversion for decreasing leachability and soly. of radionuclides and radioactive substances in contaminated soils and materials)

L47 ANSWER 18 OF 56 HCA COPYRIGHT 2010 ACS on STN

137:110485 Biodegradable polyester fibers with good tensile strength and soft handle consisting of polyester compositions containing soil nutrient salts. Matsuoka, Fumio; Takahashi, Masami; Inagaki, Koji (Unitika Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002212830 A 20020731, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-3694 20010111.

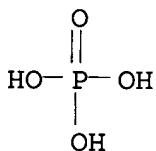
AB The biodegradable fibers (A) consist of polyester (B) compns. contg.  $\geq 1$  type of nutrient salts, or the biodegradable fibers comprise A fibers having B polyesters having m.p.  $\geq 100^\circ$ , or the biodegradable fibers comprise A fibers having B polyesters consisting of lactic acid polymers, or the biodegradable fibers comprise A fibers having the nutrient salts consisting of **phosphoric acid**-type salts, nitric acid-type salts, sulfuric acid-type salts, or silicic acid-type salts and having nutrient salt content of B polyester compns. 0.5-30%, or the biodegradable fibers comprise A fibers showing tensile strength  $\geq 2$  cN/dtex, hot water shrinkage  $\leq 15\%$ , and bending stiffness  $\leq 20$  cN. A blend comprising poly(L-lactic acid) (I) with m.p.  $169^\circ$  and master pellets comprising I and 20%  $\text{Ca}(\text{NO}_3)_2$  and having  $\text{Ca}(\text{NO}_3)_2$  content 5% was melt spun at  $210^\circ$ , cooled, lubricated, wound, and drawn to draw ratio 3.8 at roll temp.  $100^\circ$  and heater plate temp.  $130^\circ$  to give fibers with tensile strength 4.1 cN/dtex, elongation 30%, hot water shrinkage 7.8%, and bending stiffness 11.8 cN and exhibiting partial form degrdn. on embedding the fibers in soil for 12 mo.

IT 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7778-77-0, Potassium dihydrogen phosphate

(biodegradable polyester fibers with good tensile strength and soft handle consisting of polyester compns. contg. soil nutrient salts)

RN 7758-11-4 HCA

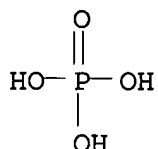
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



● 2 K

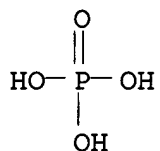
RN 7758-23-8 HCA

CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



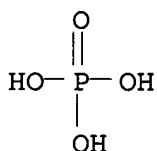
● K

IC ICM D01F006-62  
ICS D01F006-62  
CC 40-2 (Textiles and Fibers)  
Section cross-reference(s): 19  
ST biodegradable polyester fiber soil nutrient salt filled; polylactic acid biodegradable fiber soil nutrient salt filled; polybutylene succinate biodegradable fiber soil nutrient salt filled; calcium nitrate soil nutrient filled biodegradable polyester fiber; ammonium sulfate soil nutrient filled biodegradable polyester fiber; **fertilizer** soil nutrient filled biodegradable polyester fiber  
IT **Fertilizers**  
(biodegradable polyester fibers with good tensile strength and soft handle consisting of polyester compns. contg. soil nutrient salts)  
IT 7758-11-4, Dipotassium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7778-77-0, Potassium dihydrogen phosphate 7783-20-2, Ammonium sulfate, uses 10124-37-5, Calcium nitrate  
(biodegradable polyester fibers with good tensile strength and soft handle consisting of polyester compns. contg. soil nutrient salts)

L47 ANSWER 19 OF 56 HCA COPYRIGHT 2010 ACS on STN  
136:188678 Process for reduction of bioaccessibility of heavy metals.  
Chowdhury, Ajit; Stolzenburg, Thomas R. (USA). U.S. Pat. Appl. Publ. US 20020022756 A1 20020221, 5 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-832078 20010410. PRIORITY: US

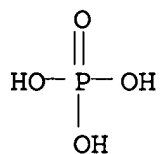
2000-195924P 20000410.

- AB A method for reducing leaching and bioaccessibility of a heavy metal from particulate matter includes the steps of treating the particulate matter with phosphate, chloride and iron additives; adding an alkali material; wetting the additive-contg. particulate matter with water; and incubating the particulate matter at a temp. above ambient temp. for a time sufficient to achieve the goals of the invention. The reactants combine with the metal(s) to promote formation of metal chloropyromorphite, particularly lead chloropyromorphite, one of the least sol. lead compds. known, in a wide range of pH conditions. The metal-contaminated particulate matter amenable to this treatment process can include, but is not limited to, lead-contaminated soil, sediment, wastes and sludges, or particulate matter from industrial emissions, such as cupola emission control dust, wet scrubber sludge, baghouse dust from metal processing operations, metal-contaminated foundry sand, incinerator fly ash and bottom ash, smelter emission control particulates, lead-contaminated paint chips, elec. cable/wire insulation sheathing, battery chips, and the like.
- IT 7558-79-4, Disodium phosphate 7558-80-7, Monosodium phosphate 7601-54-9, Trisodium phosphate 7664-38-2, Phosphoric acid, reactions 7757-93-9, Dicalcium phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Tricalcium phosphate 16068-46-5, Potassium phosphate  
(process for redn. of bioaccessibility of heavy metals)
- RN 7558-79-4 HCA
- CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



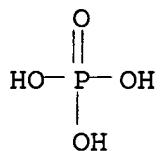
●2 Na

- RN 7558-80-7 HCA
- CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



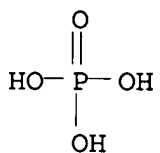
● Na

RN 7601-54-9 HCA  
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

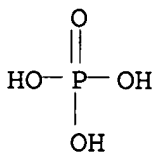


●3 Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



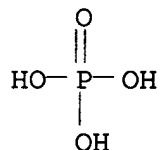
RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

RN 7758-23-8 HCA

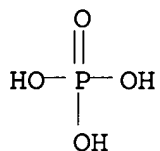
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● $\frac{1}{2}$  Ca

RN 7758-87-4 HCA

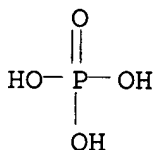
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



● $\frac{3}{2}$  Ca

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●<sub>x</sub> K

IC ICM A62D003-00

INCL 588015000

CC 60-4 (Waste Treatment and Disposal)

Section cross-reference(s): 19

IT 144-55-8, Sodium bicarbonate, reactions 298-14-6, Potassium bicarbonate 471-34-1, Calcium carbonate, reactions 497-19-8, Sodium carbonate, reactions 1302-42-7, Sodium aluminate 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesium oxide, reactions 1310-58-3, Potassium hydroxide, reactions 1310-73-2, Sodium hydroxide, reactions 1332-37-2, Iron oxide, reactions 1344-09-8,

Sodium silicate 7439-89-6, Iron, reactions 7446-70-0, Aluminum chloride, reactions 7447-40-7, Potassium chloride, reactions 7558-79-4, Disodium phosphate 7558-80-7, Monosodium phosphate 7601-54-9, Trisodium phosphate 7647-01-0, Hydrochloric acid, reactions 7647-14-5, Sodium chloride, reactions 7664-38-2, **Phosphoric acid**, reactions 7705-08-0, Ferric chloride, reactions 7720-78-7, Ferrous sulfate 7757-93-9, Dicalcium phosphate 7758-23-8, Monocalcium phosphate 7758-87-4, Tricalcium phosphate 7758-94-3, Ferrous chloride 10028-22-5, Ferric sulfate 10043-52-4, Calcium chloride, reactions 14013-86-6, Ferrous nitrate 16068-46-5, Potassium phosphate  
(process for redn. of bioaccessibility of heavy metals)

L47 ANSWER 20 OF 56 HCA COPYRIGHT 2010 ACS on STN

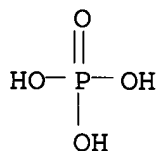
136:117928 Preparation of iodide-containing **fertilizer** for fruit and vegetable. Tang, Jian (Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1298849 A 20010613, 14 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1999-120407 19991208.

AB The chem. compn. of the **fertilizer** contains I 0.1-20, N 6.1-12.4, P2O5 4-8.1, K2O 4-11, Zn 1.1-2.5, Fe 0.6-1.3, B 0.5-1.2, Mo 0.3-1.4, Cu 0.7-1.8, Mn 0.3-1.4, and Mg 0.6-2.1%. The iodide element is from one or more of KI, NaI, CaI2, KIO3, and Ca(IO3)2. The **fertilizer** is prepd. by mixing raw material, pulverizing, dissolving, spraying, and cooling. The **fertilizer** can afford iodide element for fruit and vegetable.

IT 7664-38-2D, **Phosphoric acid**, salts  
7758-23-8, Calcium superphosphate 7778-77-0  
(prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

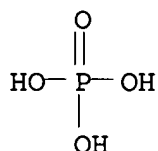
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 7758-23-8 HCA

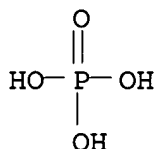
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC ICM C05G001-00

ICS C05D009-00; C05D011-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST **fertilizer** iodide fruit vegetable prepn

IT Agrochemical formulations

(iodide; prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT **Fertilizers**

(nitrogen-phosphorus-potassium; prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT Agrochemical formulations

(powders, iodide; prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT Fruit

Nutrition, plant

Vegetable

(prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT **Fertilizers**

Trace element nutrients

(prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT 7439-89-6, Iron, biological studies 7439-95-4, Magnesium, biological studies 7439-96-5, Manganese, biological studies 7440-42-8, Boron, biological studies 7440-66-6, Zinc, biological studies 7681-11-0,

Potassium iodide, biological studies 7681-82-5, Sodium iodide, biological studies 7758-05-6, Potassium iodate 7789-80-2, Calcium iodate 10102-68-8, Calcium iodide

(prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

IT 7487-88-9, Magnesium sulfate, biological studies **7664-38-2D**, **Phosphoric acid**, salts 7664-93-9D, Sulfuric acid, salts, biological studies 7720-78-7, Ferrous sulfate 7733-02-0, Zinc sulfate **7758-23-8**, Calcium superphosphate 7758-98-7, Copper sulfate, biological studies **7778-77-0** 7778-80-5, Potassium sulfate, biological studies 7783-20-2, Ammonium sulfate, biological studies 7785-87-7, Manganese sulfate 10043-35-3, Boric acid, biological studies 10124-31-9, Ammonium phosphate 11098-84-3, Ammonium molybdate 15609-81-1, Manganese ammonium phosphate 15928-74-2, Copper ammonium phosphate 41543-55-9, Zinc ammonium phosphate 52767-99-4, Iron ammonium phosphate (prepn. of iodide-contg. **fertilizer** for fruit and vegetable)

L47 ANSWER 21 OF 56 HCA COPYRIGHT 2010 ACS on STN

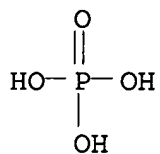
135:96943 Fixation and stabilization of metals in contaminated soils and materials. Pal, Dhiraj; Yost, Karl W.; Chisick, Steven A. (Sevenson Environmental Services, Inc., USA). U.S. US 6258018 B1 **20010710**, 17 pp., Cont.-in-part of U.S. 5,916,123. (English). CODEN: USXXAM. APPLICATION: US 1999-340898 19990628. PRIORITY: US 1990-494774 19900316; US 1991-721935 19910723; US 1993-31461 19930315; US 1996-663692 19960614; US 1997-942803 19971002.

AB The present invention discloses a method of treating heavy metal bearing process materials and heavy metal toxic hazardous wastes. The invention relates to treatment methods employed to chem. convert leachable heavy metals in heavy metal bearing solid and/or liq. waste materials to a non-leachable form by contacting or mixing the material with a chem. suspension which includes a first component which supplies sulfates, halides, halites, silicates or calcium oxide and a second component which supplies a phosphate anion. The solid and liq. waste materials include contaminated sludges, slurries, soils, wastewaters, spent carbon, sand, wire chips, plastic fluff, cracked battery casings, bird and buck shots and construction debris. The present invention discloses a process comprising a single step contacting of a hazardous waste with a two or three component chem. suspension. The present invention provides a new way of treating a universe of heavy metal contaminated materials at any pH.

IT **7601-54-9**, Trisodium phosphate **7664-38-2**, **Phosphoric acid**, reactions **7758-23-8**, Monocalcium phosphate **16068-46-5**, Potassium phosphate (fixation and stabilization of metals in contaminated soils and materials)

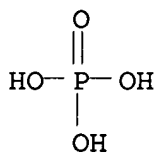
RN 7601-54-9 HCA

CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)

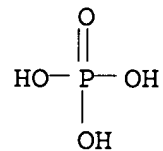


●<sub>3</sub> Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

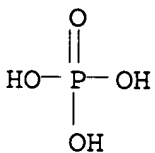


RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●<sub>1/2</sub> Ca

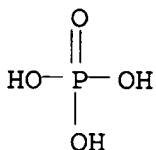
RN 16068-46-5 HCA  
CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●<sub>x</sub> K

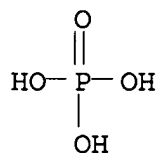
IC ICM A62D003-00

ICS E02D003-00  
 INCL 588256000  
 CC 60-2 (Waste Treatment and Disposal)  
 Section cross-reference(s): 19  
 ST stabilization fixation leachable heavy metal soil wastewater;  
 magnesium aluminum silicate stabilization fixation heavy metal;  
**phosphoric acid** stabilization fixation heavy metal;  
 tetrasodium pyrophosphate stabilization fixation heavy metal;  
 monocalcium phosphate stabilization fixation heavy metal  
 IT 1327-43-1, Magnesium aluminum silicate 7439-95-4, Magnesium,  
 reactions 7601-54-9, Trisodium phosphate 7664-38-2  
 , **Phosphoric acid**, reactions 7722-88-5,  
 Tetrasodium pyrophosphate 7758-23-8, Monocalcium phosphate  
 16068-46-5, Potassium phosphate  
 (fixation and stabilization of metals in contaminated soils and  
 materials)  
 L47 ANSWER 22 OF 56 HCA COPYRIGHT 2010 ACS on STN  
 134:236949 Phosphorus-doped activated alumina granules as low-phosphorus  
 buffers for potted plants. Hansen, Conny W.; Hofius, Henning;  
 Nielsen, Kai Lonne (Alusuisse Martinswerk G.m.b.H., Germany; Danish  
 Institute of Agricultural Sciences). PCT Int. Appl. WO 2001021553 A1  
**20010329**, 30 pp. APPLICATION: WO 2000-EP9347 20000925.  
 PRIORITY: EP 1999-118849 19990924.  
 AB A process for producing granules of a phosphorus-doped activated  
 alumina from aluminum hydroxide and a phosphorus source, is described.  
 The granules can be used as growth regulator, esp. as low phosphorus  
 buffer in potted plants.  
 IT **7778-53-2P**, Potassium phosphate **10043-83-1P**,  
 Magnesium phosphate **10103-46-5P**, Calcium phosphate  
 (in manuf. of phosphorus-doped activated alumina granules as  
 low-phosphorus buffers for potted plants)  
 RN 7778-53-2 HCA  
 CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



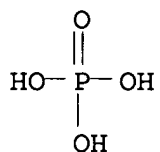
● 3 K

RN 10043-83-1 HCA  
 CN Phosphoric acid, magnesium salt (1:?) (CA INDEX NAME)



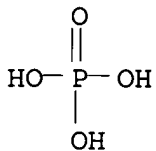
●x Mg

RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



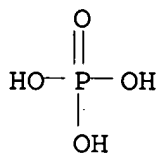
●x Ca

IT 7757-86-0, Magnesium monohydrogen phosphate 7757-93-9  
, Calcium monohydrogen phosphate 7758-11-4, Potassium  
monohydrogen phosphate 7758-23-8, Calcium dihydrogen  
phosphate 7778-77-0, Potassium dihydrogen phosphate  
13092-66-5, Magnesiumdihydrogen phosphate  
(in manuf. of phosphorus-doped activated alumina granules as  
low-phosphorus buffers for potted plants)  
RN 7757-86-0 HCA  
CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



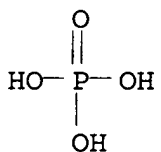
● Mg

RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



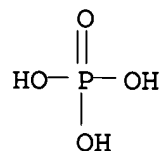
● Ca

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



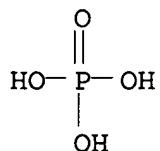
● 2 K

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



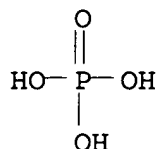
● 1/2 Ca

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



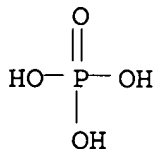
● K

RN 13092-66-5 HCA  
CN Phosphoric acid, magnesium salt (2:1) (CA INDEX NAME)



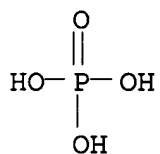
● 1/2 Mg

IT 7664-38-2, Phosphoric acid, biological studies  
(phosphorus-doped activated alumina granules as low-phosphorus buffers for potted plants)  
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



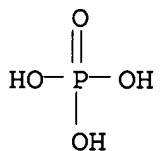
IC ICM C05B007-00  
ICS C05B001-00; C05B021-00; C05D009-00; C05B019-00; C01F007-02  
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
ST phosphorus doped activated alumina granule **fertilizer**  
IT **Fertilizers**  
(manuf. of phosphorus-doped activated alumina granules as low-phosphorus buffers for potted plants)  
IT 7778-53-2P, Potassium phosphate 7779-90-0P, Zinc phosphate  
10043-83-1P, Magnesium phosphate 10103-46-5P,  
Calcium phosphate 10103-48-7P, Copper phosphate 10402-24-1P, Iron phosphate

- (in manuf. of phosphorus-doped activated alumina granules as low-phosphorus buffers for potted plants)
- IT 7757-86-0, Magnesium monohydrogen phosphate 7757-93-9, Calcium monohydrogen phosphate 7758-11-4, Potassium monohydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate 7778-77-0, Potassium dihydrogen phosphate 13092-66-5, Magnesiumdihydrogen phosphate 13587-24-1, Copper monohydrogen phosphate 13598-37-3, Zinc dihydrogen phosphate 13826-80-7 14332-60-6, Zinc monohydrogen phosphate 18718-08-6 18718-12-2
- (in manuf. of phosphorus-doped activated alumina granules as low-phosphorus buffers for potted plants)
- IT 7664-38-2, **Phosphoric acid**, biological studies 14265-44-2, Phosphate, biological studies (phosphorus-doped activated alumina granules as low-phosphorus buffers for potted plants)
- L47 ANSWER 23 OF 56 HCA COPYRIGHT 2010 ACS on STN
- 134:118329 Phosphorus addition in gasification, combustion, or pyrolysis. Sorensen, Lasse Holst; Fjellerup, Jan; Henriksen, Ulrik (Reatech, Den.). PCT Int. Appl. WO 2001005913 A1 20010125, 12 pp. APPLICATION: WO 1999-DK409 19990716.
- AB The invention provides a method useful in combustion, gasification, or pyrolysis processes. The method is useful for the thermal treatment of carbonaceous fuels contg. the inorg. species K and/or Na. The method may be utilized for combustion, gasification, or pyrolysis processes for conversion of biomass, coals, waste materials, or chars prepd. by pyrolyzing the original materials. The residual materials may act as a fertilizing agent, and thus the value of the residual materials is improved. The method utilizes P in the form of **phosphoric acid** or P salts. The alkali and alkali earth metals in the fuel reacts with the added externally provided P, which may be added in the form of **phosphoric acid**, P oxides, or P salts. The alkali or earth alkali metals are converted to phosphates, ortho-phosphates, K phosphate, Na phosphate, Ca phosphate, K Ca phosphates, or CaHPO<sub>4</sub>. The resulting compns. strongly decrease alkali induced corrosive effects, and have high melting temps., thus having an anti-sintering effect on the process.
- IT 7632-05-5, Sodium phosphate 7664-38-2, **Phosphoric acid**, uses 7757-93-9, Calcium hydrogen phosphate 10043-83-1, Magnesium phosphate 10103-46-5, Calcium phosphate 16068-46-5, Potassium phosphate
- (for phosphorus addn. in gasification, combustion, or pyrolysis)
- RN 7632-05-5 HCA
- CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)

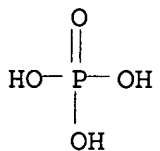


●x Na

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

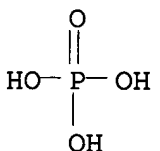


RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

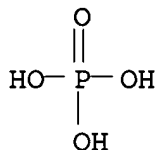
RN 10043-83-1 HCA  
CN Phosphoric acid, magnesium salt (1:?) (CA INDEX NAME)



●x Mg

RN 10103-46-5 HCA

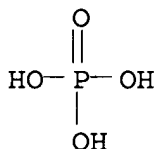
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

IC ICM C10L009-10

ICS C10L010-04; C05F011-00

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 19, 51

ST phosphorus addn gasification; pyrolysis phosphorus addn; combustion  
phosphorus addn; **fertilizer** manuf gasification residue

IT **Fertilizers**

(manuf. from phosphorus-rich gasification residues)

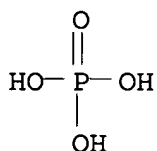
IT 1314-56-3, Phosphorus oxide, uses 6303-21-5, Hypophosphorous acid  
**7632-05-5**, Sodium phosphate **7664-38-2**,  
**Phosphoric acid**, uses **7757-93-9**, Calcium  
hydrogen phosphate 7803-51-2, Phosphine **10043-83-1**,  
Magnesium phosphate **10103-46-5**, Calcium phosphate  
10124-31-9, Ammonium phosphate 10381-36-9, Nickel phosphate  
10402-24-1, Iron phosphate 13598-36-2, Phosphorous acid, uses  
14332-09-3, Hypophosphorous acid **16068-46-5**, Potassium  
phosphate 17409-91-5, Cobalt phosphate  
(for phosphorus addn. in gasification, combustion, or pyrolysis)

L47 ANSWER 24 OF 56 HCA COPYRIGHT 2010 ACS on STN

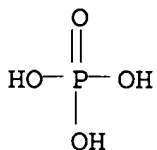
132:63662 Microgranular **fertilizer** composition for local  
application during sowing or transplanting. Miele, Sergio;  
Bargiacchi, Enrica (Agroqualita S.r.l., Italy). Eur. Pat. Appl. EP  
968980 A2 **20000105**, 8 pp. APPLICATION: EP 1999-112549

19990701. PRIORITY: IT 1998-MI1521 19980702.

- AB Microgranular **fertilizer** compns. for local application during sowing or transplanting, are given. They comprise org. nitrogen and phosphate or phosphonitrogen compds. as well as, if necessary, other **fertilizer** components or adjuvants. The diam. of the granules is 0.1-1.5 mm, preferably 0.5-1 mm. The phosphate or phosphonitrogen compds. are ammonium phosphates, K phosphates, ammonium polyphosphates, urea-**phosphoric acid** adducts. etc.y. The org. nitrogen materials are degraded and dried animal blood, meat meal, hydrolyzed animal epithelium, chrysalis meal, crustacean chitin, horn and hoof meal and or wildfowl feathers. Other org. components are fish meal, bone meal and/or chicken manure.
- IT **7664-38-2D, Phosphoric acid**, adduct with urea, biological studies **10103-46-5**, Calcium phosphate **16068-46-5**, Potassium phosphate (in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- RN 7664-38-2 HCA
- CN Phosphoric acid (CA INDEX NAME)

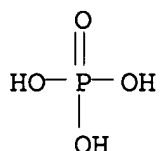


- RN 10103-46-5 HCA
- CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

- RN 16068-46-5 HCA
- CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

IC ICM C05C009-02  
ICS C05B015-00; C05F001-00; C05G003-08; C05G003-02; C05F011-00;  
C05F011-08

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST microgranular **fertilizer** compn local application sowing  
transplanting

IT Polyphosphoric acids  
(ammonium salts; in microgranular **fertilizer** compn. for  
local application during sowing or transplanting)

IT Epithelium  
(animal, hydrolyzed; in microgranular **fertilizer** compn.  
for local application during sowing or transplanting)

IT Flours and Meals  
Flours and Meals  
(blood meal; in microgranular **fertilizer** compn. for local  
application during sowing or transplanting)

IT Manure  
(chicken; in microgranular **fertilizer** compn. for local  
application during sowing or transplanting)

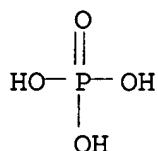
IT Wastes  
(from dephosphorylation; in microgranular **fertilizer**  
compn. for local application during sowing or transplanting)

IT Body, anatomical  
(horn, meal; in microgranular **fertilizer** compn. for local  
application during sowing or transplanting)

IT Aminoplasts  
Phosphate rock  
Superphosphates  
(in microgranular **fertilizer** compn. for local application  
during sowing or transplanting)

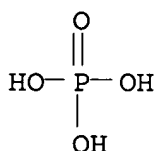
IT Blood  
Blood  
Fish  
Hoof  
Meat  
Meat  
Pupa  
(meal; in microgranular **fertilizer** compn. for local  
application during sowing or transplanting)

- IT Flours and Meals  
Flours and Meals  
(meat meal; in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT **Fertilizers**  
(microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT Humic acids  
(salts, sol.; in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT Phosphates, biological studies  
(thermal; in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT Feather  
(wildfowl; in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT 1398-61-4, Chitin  
(crustacean; in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- IT 57-13-6D, Urea, adduct with **phosphoric acid**, biological studies 1314-13-2, Zinc oxide, biological studies 7487-88-9, Magnesium sulfate, biological studies **7664-38-2D**, **Phosphoric acid**, adduct with urea, biological studies 7720-78-7, Iron(II) sulfate 7723-14-0, Phosphorus, biological studies 7727-37-9, Nitrogen, biological studies 7778-80-5, Potassium sulfate, biological studies 7783-28-0, Ammonium hydrogen phosphate 7784-30-7, Aluminum phosphate 9011-05-6, Urea-formaldehyde condensate **10103-46-5**, Calcium phosphate 10124-31-9, Ammonium phosphate **16068-46-5**, Potassium phosphate 22879-15-8, Calcium sulfate hydrate  
(in microgranular **fertilizer** compn. for local application during sowing or transplanting)
- L47 ANSWER 25 OF 56 HCA COPYRIGHT 2010 ACS on STN
- 132:24423 Novel techniques for destructive recovery of asbestos wastes.  
Derie, R. (Exploitation des Mines, Brussels, 1050, S. Afr.). Chimie Nouvelle, 17(67), 2055-2059 (French) **1999**. CODEN: CHNOEE.  
ISSN: 0771-730X. Publisher: Societe Royale de Chimie.
- AB Methods are described for destruction of waste asbestos using excess **H3PO4** followed by calcination, resulting in products suitable for use as **fertilizers**.
- IT **7757-87-1**, Magnesium phosphate ( $Mg_3(PO_4)_2$ )  
(novel techniques for destructive recovery of asbestos wastes)
- RN **7757-87-1** HCA
- CN Phosphoric acid, magnesium salt (2:3) (CA INDEX NAME)

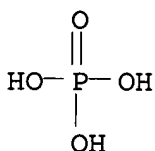


● 3/2 Mg

IT 7664-38-2, **Phosphoric acid**, uses  
 7778-77-0, Potassium dihydrogen phosphate  
 (novel techniques for destructive recovery of asbestos wastes)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



RN 7778-77-0 HCA  
 CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

CC 49-3 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 19, 60  
 ST asbestos waste destruction **fertilizer** recovery  
 IT 7757-87-1, Magnesium phosphate ( $\text{Mg}_3(\text{PO}_4)_2$ ) 13446-24-7,  
 Magnesium phosphate ( $\text{Mg}_2\text{P}_2\text{O}_7$ ) 14464-46-1, Cristobalite  
 (novel techniques for destructive recovery of asbestos wastes)  
 IT 7664-38-2, **Phosphoric acid**, uses  
 7778-77-0, Potassium dihydrogen phosphate  
 (novel techniques for destructive recovery of asbestos wastes)

L47 ANSWER 26 OF 56 HCA COPYRIGHT 2010 ACS on STN  
 131:161187 Solid waste treatment agents for low-temperature

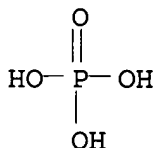
detoxification. Kawashima, Masatake; Ogawa, Takashi; Terada, Kazuhiro; Okayama, Hiroyuki; Sugiyama, Katsushi; Hosoda, Kazuo; Moriya, Masafumi (Miyoshi Yushi Kabushiki Kaisha, Japan). Eur. Pat. Appl. EP 937483 A1 **19990825**, 13 pp. APPLICATION: EP 1999-102346 19990206. PRIORITY: JP 1998-44532 19980210; JP 1998-318356 19981021; JP 1998-375339 19981214.

AB Solid waste treatment agents are added to solid wastes contg. harmful metals and/or chlorinated org. compds. such as dioxins and PCBs to make the solid waste harmless. The agents can be phosphonic acid and/or phosphinic acid or their derivs., an aluminum compd. and/or a titanium compd., esp. TiO<sub>2</sub>. Other agents include water glass, slaked lime, cement, neutralizing agents, metal scavengers and **phosphoric acid**. When the agents are used to treat the wastes under irradiation (e.g., UV irradiation or sunlight), the wastes are effectively made harmless even when the treatment is conducted at a relatively low temp.

IT **7632-05-5**, Sodium phosphate **7664-38-2**, **Phosphoric acid**, uses **10043-83-1**, Magnesium phosphate **10103-46-5**, Calcium phosphate (treatment agents; solid waste treatment agents for low-temp. detoxification)

RN 7632-05-5 HCA

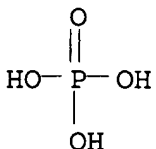
CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)



●x Na

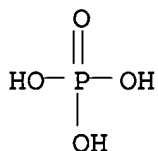
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



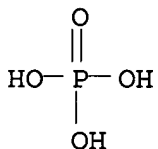
RN 10043-83-1 HCA

CN Phosphoric acid, magnesium salt (1:?) (CA INDEX NAME)



●x Mg

RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

IC ICM A62D003-00  
CC 60-4 (Waste Treatment and Disposal)  
Section cross-reference(s): 19  
IT 1305-62-0, Slaked lime, uses 1314-62-1, Vanadia, uses 1344-09-8, Water glass 1344-28-1, Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), uses 6303-21-5D, Phosphinic acid, derivs. 7429-90-5D, Aluminum, compds., uses 7439-98-7D, Molybdenum, compds., uses 7440-21-3D, Silicon, compds., uses 7440-32-6D, Titanium, compds., uses 7440-33-7D, Tungsten, compds., uses 7440-45-1D, Cerium, compds., uses 7440-62-2D, Vanadium, compds., uses 7632-05-5, Sodium phosphate 7664-38-2, Phosphoric acid, uses 7681-53-0, Sodium hypophosphite 7782-87-8 7784-30-7, Aluminum phosphate 7789-79-9, Calcium hypophosphite 7803-65-8 10043-01-3, Aluminum sulfate 10043-83-1, Magnesium phosphate 10103-46-5, Calcium phosphate 10377-57-8, Magnesium hypophosphite 13463-67-7, Titania, uses 13598-36-2D, Phosphonic acid, derivs. 13765-96-3 15475-67-9, Sodium phosphite 17466-29-4 21645-51-2, Aluminum hydroxide, uses 25493-06-5, Phosphonic acid, calcium salt 49831-54-1, Phosphonic acid, ammonium salt 106145-21-5, Phosphonic acid, magnesium salt  
(treatment agents; solid waste treatment agents for low-temp. detoxification)

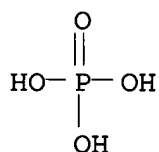
deep-sea brines. Shimamura, Kenzo (Japan). Jpn. Kokai Tokkyo Koho JP 10219249 A 19980818 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-55394 19970203.

AB Activating agents obtained by mixing brines (5-80% by wt.) with inorg. acids, org. acids, or salts act as effective culture media for aquatic and soil microorganisms, increase the diversity of the microbial layer, and directly or indirectly activate the microorganisms, flora and fauna within the treated zone. Aspergillus species, pyroligneous acids, powders of coastal plants, allicin, and actinomycetes may be added to the activators. Thus, an undild. soln. was obtained by mixing brines 60, **phosphoric acid** 30, and potassium phosphate 10%. The soln. was dild. 1000-fold and sprayed on leaves of cucumber and eggplant twice in 1 mo; the treatment revived faded leaves and repelled insect pests.

IT **7664-38-2, Phosphoric acid**, biological studies **10103-46-5**, Calcium phosphate **16068-46-5**, Potassium phosphate (soil activators and culture media contg. brines and)

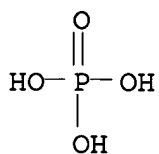
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 10103-46-5 HCA

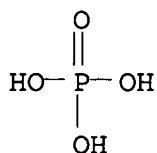
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●<sub>x</sub> Ca

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



● x K

IC ICM C09K017-42  
ICS A01G001-00; A01G007-00; C09K017-14; C09K017-32; C09K017-50;  
C09K101-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 5, 16

IT 77-92-9, biological studies 7446-70-0, Aluminium chloride,  
biological studies 7664-38-2, **Phosphoric acid**, biological studies 10103-46-5, Calcium  
phosphate 12040-57-2, Iron chloride 16068-46-5, Potassium  
phosphate  
(soil activators and culture media contg. brines and)

L47 ANSWER 28 OF 56 HCA COPYRIGHT 2010 ACS on STN

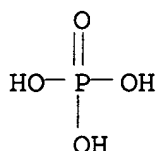
129:81225 Original Reference No. 129:16781a,16784a Soil activator  
containing deep-sea brines. Idaka, Eiichi (Idaka, Eiichi, Japan).  
Jpn. Kokai Tokkyo Koho JP 10152681 A 19980609 Heisei, 20  
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-284194  
19970722. PRIORITY: JP 1996-245491 19960723; JP 1996-280176 19960930.

AB An agent that acts as an effective culture medium for aquatic and soil  
microorganisms, increases the diversity of the microbial layer, and  
directly or indirectly activates the microorganisms, flora and fauna  
that exist in a zone contains 1 ppm to 100% by wt. brine; the brine  
may be mixed with acid, base and(or) salt, or basic polysaccharide.  
Thus, brine 60, urea 2, potassium phosphate 5% were mixed to give a  
soil activator stock soln. which was dild. and applied twice in 1 mo  
as a foliar spray to cucumber and eggplant. Through the treatment  
pale leaves were reinvigorated and became verdant, and insect pests  
were repelled.

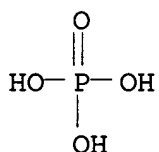
IT 7664-38-2, **Phosphoric acid**, biological  
studies 10103-46-5, Calcium phosphate 16068-46-5,  
Potassium phosphate  
(soil activator contg. deep-sea brines and)

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

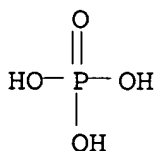


RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA  
CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

IC ICM C09K017-02  
ICS A01G001-00; A01N061-00; C09K017-42; C09K017-50; C09K101-00;  
C09K109-00  
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
IT 57-13-6, Urea, biological studies 77-92-9, Citric acid, biological  
studies 471-34-1, Calcium carbonate, biological studies 539-86-6,  
Allicin 1305-62-0, Calcium hydroxide, biological studies  
1309-42-8, Magnesium hydroxide 1398-61-4, Chitin 1398-61-4D,  
Chitin, derivs. 7446-70-0, Aluminium chloride, biological studies  
7664-38-2, Phosphoric acid, biological  
studies 7778-49-6, Potassium citrate 9012-76-4, Chitosan  
9012-76-4D, Chitosan, derivs. 10103-46-5, Calcium phosphate  
12040-57-2, Iron chloride 16068-46-5, Potassium phosphate  
(soil activator contg. deep-sea brines and)

L47 ANSWER 29 OF 56 HCA COPYRIGHT 2010 ACS on STN

127:347713 Original Reference No. 127:68201a,68204a Method of nonhazardous removal of paint containing heavy metals and coating preparation for performing the removal. Stanforth, Robert R.; Knopp, Paul V. (Rmt, Inc., USA). PCT Int. Appl. WO 9740107 A1 19971030, 19 pp. APPLICATION: WO 1997-US5526 19970404. PRIORITY: US 1996-635516 19960422.

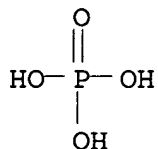
AB A method for removing heavy metal- (e.g., Pb)-contg. paints without the prodn. of hazardous wastes involves applying a coating prepn. to the paint prior to its removal from its surface. The prepn. contains Pb-reactive chems., e.g., phosphates, metal sulfides and org. sulfides and optionally, also buffers, e.g., MgO and Mg(OH)<sub>2</sub>. These chems. react with the heavy metals rendering them nonhazardous. The invention also involves the coating prepn. itself.

IT 7601-54-9, Trisodium phosphate 7664-38-2, Phosphoric acid, uses 10103-46-5, Calcium phosphate

(nonhazardous removal of paint contg. heavy metals by coating with compns. contg.)

RN 7601-54-9 HCA

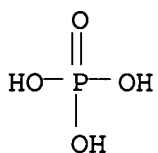
CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



●3 Na

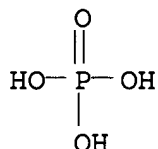
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



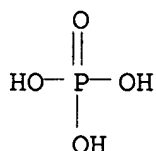
RN 10103-46-5 HCA

CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



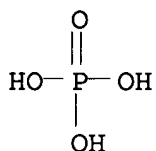
●x Ca

- IC ICM C09D009-00  
ICS A62D003-00; B09B003-00
- CC 42-11 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 60
- IT Superphosphates  
(triple superphosphate **fertilizers**; nonhazardous removal  
of paint contg. heavy metals by coating with compns. contg.)
- IT 1314-98-3, Zinc sulfide, uses 4384-81-0, Sodium dithiocarbamate  
**7601-54-9**, Trisodium phosphate **7664-38-2**,  
**Phosphoric acid**, uses **10103-46-5**, Calcium  
phosphate 21109-95-5, Barium sulfide  
(nonhazardous removal of paint contg. heavy metals by coating with  
compns. contg.)
- L47 ANSWER 30 OF 56 HCA COPYRIGHT 2010 ACS on STN  
115:259363 Original Reference No. 115:44061a,44064a Method for producing  
alkali metal phosphate. Weckman, Stig Goran Anders; Perander, Robert;  
Riihimaki, Sakari (Kemira Oy, Finland). PCT Int. Appl. WO 9115424 A1  
**19911017**, 23 pp. APPLICATION: WO 1991-FI100 19910405.  
PRIORITY: FI 1990-1770 19900406.
- AB Alkali metal phosphate, in particular KH<sub>2</sub>PO<sub>4</sub> or its aq. soln., is  
prepd. by reacting **fertilizer** grade **H<sub>3</sub>PO<sub>4</sub>** with  
alkali metal chloride at 350-700° to produce alkali metal  
metaphosphate, hydrolyzing the solid reaction product, removing the  
insol. residue, e.g., sulfate, by adding a Ca salt in **H<sub>3</sub>PO<sub>4</sub>**  
used as an initial reactant, and crystg. and sepg. the alkali metal  
phosphate from the aq. soln.
- IT **7778-77-0P**, Potassium dihydrogen phosphate  
(manuf. of, by reaction of **phosphoric acid** with  
potassium chloride)
- RN 7778-77-0 HCA
- CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)

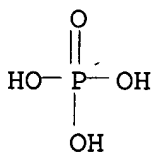


● K

IT 7664-38-2, **Phosphoric acid**, reactions  
 (reaction of, with potassium chloride, in potassium dihydrogen  
 phosphate manuf.)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



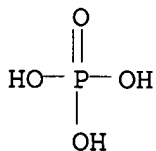
IT 10103-46-5, Calcium phosphate  
 (sulfate removal by reaction with, in alkali metal phosphates  
 manuf.)  
 RN 10103-46-5 HCA  
 CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

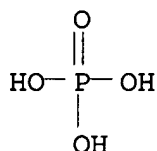
IC ICM C01B025-30  
 ICS C05B007-00  
 CC 49-5 (Industrial Inorganic Chemicals)  
 ST alkali metal phosphate manuf; potassium dihydrogen phosphate manuf;  
**phosphoric acid** reaction metal phosphate manuf  
 IT Alkali metal chlorides  
 (reaction of, with **phosphoric acid**, in  
 potassium dihydrogen phosphate manuf.)  
 IT 7778-77-0P, Potassium dihydrogen phosphate

- (manuf. of, by reaction of **phosphoric acid** with potassium chloride)
- IT 7447-40-7, Potassium chloride, reactions 7647-14-5, Sodium chloride, reactions  
(reaction of, with **phosphoric acid**, in potassium dihydrogen phosphate manuf.)
- IT 7664-38-2, **Phosphoric acid**, reactions  
(reaction of, with potassium chloride, in potassium dihydrogen phosphate manuf.)
- IT 471-34-1, Calcium carbonate, uses and miscellaneous 1305-62-0, Calcium hydroxide, uses and miscellaneous 1305-78-8, Calcia, uses and miscellaneous 1306-06-5, Hydroxylapatite (Ca<sub>5</sub>(OH)(PO<sub>4</sub>)<sub>3</sub>) 10043-52-4, Calcium chloride, uses and miscellaneous 10103-46-5, Calcium phosphate  
(sulfate removal by reaction with, in alkali metal phosphates manuf.)
- L47 ANSWER 31 OF 56 HCA COPYRIGHT 2010 ACS on STN  
114:114222 Original Reference No. 114:19217a,19220a  
Extraction-photometric determination of fluoride in **phosphoric acid** and forage phosphates. Kostadinova, L. S.; Elenkova, N. G.; Nedelcheva, Ts. K. (Higher Inst. Chem. Technol., Sofia, Bulg.). Zhurnal Analiticheskoi Khimii, 45(11), 2235-8 (Russian) 1990  
. CODEN: ZAKHA8. ISSN: 0044-4502.
- AB F- was detd. by modifying the method of I. V. Pyatnitskii and S. G. Pinaeva (1983) based on measuring the absorbance of CHCl<sub>3</sub> exts. contg. Al-Xylenol Orange-F--trioctylamine complexes at 575 nm. The relative std. deviation was 0.02-0.07 for detg. 0.015-0.22% F- in CaHPO<sub>4</sub>, H<sub>3</sub>PO<sub>4</sub>, and NaH<sub>2</sub>PO<sub>4</sub>.
- IT 7558-80-7, Sodium dihydrogen phosphate 7664-38-2, **Phosphoric acid**, analysis 7757-93-9, Calcium hydrogen phosphate  
(fluoride detn. in, extn.-spectrophotometric)
- RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)

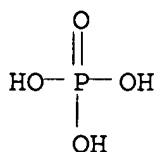


● Na

- RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)



RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)

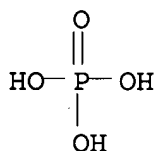


● Ca

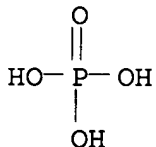
- CC 79-6 (Inorganic Analytical Chemistry)  
Section cross-reference(s): 19
- ST fluoride detn extn spectrophotometry; calcium phosphate analysis  
fluoride; sodium phosphate analysis fluoride; **phosphoric  
acid** analysis fluoride
- IT 16984-48-8, Fluoride, analysis  
(detn. of, in **phosphoric acid** and phosphates,  
extn.-spectrophotometric)
- IT 7558-80-7, Sodium dihydrogen phosphate 7664-38-2,  
**Phosphoric acid**, analysis 7757-93-9,  
Calcium hydrogen phosphate  
(fluoride detn. in, extn.-spectrophotometric)
- L47 ANSWER 32 OF 56 HCA COPYRIGHT 2010 ACS on STN
- 113:81612 Original Reference No. 113:13772h,13773a Manufacture of  
potassium magnesium phosphate hexahydrate. Loeblich, Karl Richard;  
Lange, Susanne (Kali und Salz A.-G., Germany). Ger. DE 3914796 C1  
**19900517**, 7 pp. (German). CODEN: GWXXAW. APPLICATION: DE  
1989-3914796 19890505.
- AB This cascade process comprises converting  $\text{Ca}(\text{H}_2\text{PO}_4)_2$  with  $\text{K}_2\text{SO}_4$  and a  
basic Mg compd. in 2 stages and recovering gypsum byproduct. The  
 $\text{K}_2\text{SO}_4$  necessary in the 1st stage is introduced in the 2nd stage  
before, or together with, the addn. of  $\text{MgO}$  and/or  $\text{Mg}(\text{OH})_2$ , and, after  
crystg. and sepg. the  $\text{KMgPO}_4$ , is transferred to the 1st stage with the  
mother liquor, where it is added to a dispersion of fine  $\text{Ca}(\text{H}_2\text{PO}_4)_2$ ,  
which is recycled from this 1st stage and already contains gypsum  
crystn. nuclei, in the gypsum filtrate. Part of the slurry from the  
1st stage is recycled and used for dispersing the  $\text{Ca}(\text{H}_2\text{PO}_4)_2$ , while  
the other part is filtered to remove the gypsum and to give the  $\text{KH}_2\text{SO}_4$

soln. needed in the 2nd stage. This soln. is added together with, or immediately after the addn. of, MgO and/or Mg(OH)<sub>2</sub> and K<sub>2</sub>SO<sub>4</sub> to the recycled discharge from the 2nd stage, which already contains KMgPO<sub>4</sub> crystn. nuclei. NH<sub>3</sub> is added to the 2nd stage a crystn. catalyst. Part of the slurry from the 2nd stage is recycle, while the other part is littered to remove the KMgPO<sub>4</sub> and to give the mother liquor that is recycled to the 1st stage.

IT 7664-38-2, Phosphoric acid, uses and  
miscellaneous  
(crystn. catalyst, in potassium magnesium phosphate  
fertilizers manuf.)  
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

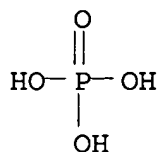


IT 7778-77-0, Potassium dihydrogen phosphate  
(reaction of, with basic magnesium compds., in potassium magnesium  
phosphate fertilizers manuf.)  
RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IT 7758-23-8, Calcium dihydrogen phosphate  
(reaction of, with potassium sulfate and basic magnesium compd., in  
potassium magnesium phosphate fertilizers manuf.)  
RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

- IC ICM C01B025-45
- ICS C01F011-46; C05B009-00
- CC 49-5 (Industrial Inorganic Chemicals)
- Section cross-reference(s): 19
- ST calcium dihydrogen phosphate potassium sulfate; magnesia phosphate potassium sulfate; magnesium hydroxide phosphate potassium sulfate; potassium magnesium phosphate potassium sulfate; **fertilizer** superphosphate potassium magnesium phosphate
- IT **Fertilizers**  
(magnesium phosphate, potassium, two-stage manuf. of)
- IT **7664-38-2, Phosphoric acid**, uses and miscellaneous 7664-41-7, Ammonia, uses and miscellaneous (crystn. catalyst, in potassium magnesium phosphate **fertilizers** manuf.)
- IT 7440-09-7P  
(**fertilizers**, magnesium phosphate, potassium, two-stage manuf. of)
- IT 13397-24-5P, Gypsum, preparation (manuf. of byproduct, in potassium magnesium phosphate **fertilizers** manuf.)
- IT 13718-30-4P, Potassium magnesium phosphate (manuf. of, two-stage, from calcium dihydrogen phosphate and potassium sulfate and basic magnesium compd., for **fertilizers**)
- IT **7778-77-0**, Potassium dihydrogen phosphate (reaction of, with basic magnesium compds., in potassium magnesium phosphate **fertilizers** manuf.)
- IT 7778-80-5, Potassium sulfate, reactions (reaction of, with calcium dihydrogen phosphate and basic magnesium compd., in potassium magnesium phosphate **fertilizers** manuf.)
- IT 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesia, reactions (reaction of, with potassium dihydrogen phosphate, in potassium magnesium phosphate **fertilizers** manuf.)
- IT **7758-23-8**, Calcium dihydrogen phosphate (reaction of, with potassium sulfate and basic magnesium compd., in potassium magnesium phosphate **fertilizers** manuf.)

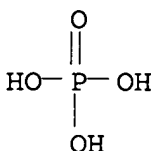
113:77129 Original Reference No. 113:13057a,13060a Ammonia losses from surface-placed mixtures of urea-calcium-potassium salts in the presence of phosphorus. Fenn, L. B.; Tatum, G.; Horst, G. (Texas Agric. Exp. Stn., Texas A and M Univ. Syst., College Station, TX, 77843, USA). Fertilizer Research, 21(3), 125-31 (English) 1990. CODEN: FRESDF. ISSN: 0167-1731.

AB This paper compares NH<sub>3</sub> losses from surface applied urea plus KCl or CaCl<sub>2</sub> in the presence of 5 common P sources. The N, with Ca, K, and P salts, was surface-applied to a calcareous (Harkey) and an acid soil (Cuthbert) in a lab. and the NH<sub>3</sub> losses detd. by passage of the exhaust air through a 2% boric acid soln. NH<sub>3</sub> losses were increased with (in the presence of KCl or CaCl<sub>2</sub>) KH<sub>2</sub>PO<sub>4</sub> (calcareous soil only) and K<sub>2</sub>HPO<sub>4</sub>, unaffected by Na<sub>5</sub>P<sub>3</sub>O<sub>10</sub> (PP), but decreased with Ca(H<sub>2</sub>PO<sub>4</sub>)<sub>2</sub> (CaP) and H<sub>3</sub>PO<sub>4</sub> (HP) (No HP or PP applied to the acid soil). Urea which hydrolyses in environments with lower sol. and desorbable Ca levels is susceptible to higher NH<sub>3</sub> losses. The effectiveness of KCl for control of NH<sub>3</sub> loss depended on the existence of desorbable Ca to react with the decomp. urea. Therefore the deleterious impact of P on NH<sub>3</sub> loss was greater with KCl than with CaCl<sub>2</sub>. Adding Ca directly with the urea made addnl. Ca available for reaction with P and urea. CaP alone with urea, in a calcareous soil, did not reduce NH<sub>3</sub> loss; however, NH<sub>3</sub> loss was reduced in the acid soil. The addn. of CaCl<sub>2</sub> with urea + CaP reduced NH<sub>3</sub> loss more than CaCl<sub>2</sub> with urea. The HP reaction with CaCO<sub>3</sub> was more rapid and complete than occurred with the acidic CaP. PP with urea had little impact on NH<sub>3</sub> loss over that produced by the KCl or CaCl<sub>2</sub> salts alone. HP and CaP did not appear to function strictly as acid sources (calcareous soil). The Harkey soil has 8% CaCO<sub>3</sub> which would appear adequate to neutralize any acidity introduced by the P fertilizers. The explanation may lie in double salt formation between the Ca-urea-P materials.

IT 7664-38-2, Phosphoric acid, biological studies 7758-11-4, Dipotassium hydrogen phosphate 7778-77-0, Potassium dihydrogen phosphate (ammonia losses from soils treated with urea response to, calcium and potassium salts in relation to)

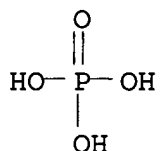
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



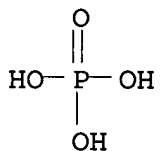
RN 7758-11-4 HCA

CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



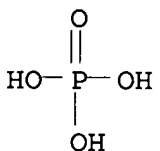
● 2 K

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IT 10103-46-5  
(fertilizers, calcium phosphate, ammonia losses from  
soils treated with urea response to)  
RN 10103-46-5 HCA  
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

CC 19-3 (Fertilizers, Soils, and Plant Nutrition)  
IT Soils  
(Typic Torrifluvents, ammonia loss from, after urea  
fertilizer application, phosphorus compds. and calcium and  
potassium salts effect on)  
IT Soils  
(acid, ammonia loss from, after urea fertilizer  
application, phosphorus compds. and calcium and potassium salts

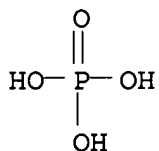
- effect on)
- IT **Fertilizers**  
(calcium phosphate, ammonia losses from soils treated with urea response to)
- IT **Fertilizers**  
(potassium chloride, ammonia losses from soils treated with urea response to phosphorus compds. and)
- IT **Fertilizers**  
(urea, ammonia loss from soils treated with, phosphorus compds. and calcium and potassium salts effects on)
- IT **7664-38-2, Phosphoric acid**, biological studies **7758-11-4**, Dipotassium hydrogen phosphate **7758-29-4 7778-77-0**, Potassium dihydrogen phosphate  
(ammonia losses from soils treated with urea response to, calcium and potassium salts in relation to)
- IT **471-34-1**, Calcium carbonate, biological studies  
(**fertilizer phosphoric acid** neutralization by, in soils, ammonia loss after urea application in relation to)
- IT **57-13-6 7664-41-7 10103-46-5**  
(**fertilizers**, calcium phosphate, ammonia losses from soils treated with urea response to)
- IT **57-13-6 7447-40-7 7664-41-7**  
(**fertilizers**, potassium chloride, ammonia losses from soils treated with urea response to phosphorus compds. and)
- IT **57-13-6 7440-09-7 7440-70-2 7664-41-7**  
(**fertilizers**, urea, ammonia loss from soils treated with, phosphorus compds. and calcium and potassium salts effects on)
- IT **7664-41-7**, Ammonia, biological studies  
(loss of, from soils after urea **fertilizer** application, phosphorus compds. and calcium and potassium salts effects on)

L47 ANSWER 34 OF 56 HCA COPYRIGHT 2010 ACS on STN

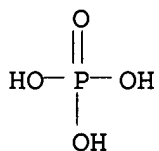
112:62081 Original Reference No. 112:10539a,10542a Effect of a simultaneous action of chemical reagents and ionizing radiation on filterability and settling properties of wastewater sludges. Petryaeva, E. P.; Sosnovskaya, A. A.; Shlyk, V. G.; Subbotina, N. N. (FKhP, BGU, USSR). Vestsi Akademii Navuk BSSR, Seryya Fizika-Energetychnykh Navuk (3), 16-19 (Russian) **1989**. CODEN: VAFEAW. ISSN: 0374-4760.

AB Treatment of wastewater sludges by  $\gamma$ -ray and electron beam irradiation. 0.5-3 KGy and lime, **H3PO4**, **KH2PO4**, **CaHPO4**, **Ca3(PO4)2**, **Ca(H2PO4)2**, and double superphosphate significantly affected filterability and settling properties. Liming of sludges at 16% of sludge dry wt. followed electron beam irradiation at 2 KGy increased the sludge settling rate 50-fold. Addition of **CaHPO4** at 184% of the sludge dry wt. decreased the sp. filtration resistance 90-fold. Irradiation of the pretreated sludge at 0.5-1 KGy further decreases the sp. filtration resistance (1.5-2)-fold. Chemical treatment of sludges with lime and **H3PO4** salts improves the **fertilizer** properties of the dewatered materials.

IT 7664-38-2, Phosphoric acid, uses and  
 miscellaneous 7757-93-9 7758-23-8, Calcium  
 phosphate, monobasic 7758-87-4 7778-77-0,  
 Potassium dihydrogen phosphate  
 (wastewater sludge treatment with,  $\gamma$ -ray and electron-beam  
 irradiation in conjunction with, filterability and settling properties  
 response to)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)

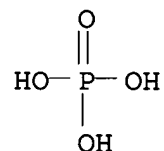


RN 7757-93-9 HCA  
 CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



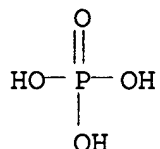
● Ca

RN 7758-23-8 HCA  
 CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



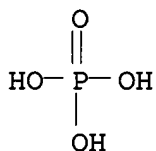
● 1/2 Ca

RN 7758-87-4 HCA  
 CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



● 3/2 Ca

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



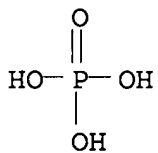
● K

CC 60-4 (Waste Treatment and Disposal)  
Section cross-reference(s): 71  
IT **7664-38-2, Phosphoric acid**, uses and  
miscellaneous **7757-93-9 7758-23-8**, Calcium  
phosphate, monobasic **7758-87-4 7778-77-0**,  
Potassium dihydrogen phosphate  
(wastewater sludge treatment with,  $\gamma$ -ray and electron-beam  
irradn. in conjunction with, filterability and settling properties  
response to)

L47 ANSWER 35 OF 56 HCA COPYRIGHT 2010 ACS on STN  
110:74332 Original Reference No. 110:12271a,12274a Adhesion of  
encapsulating phosphate compositions to urea granules. Plyshevskii,  
S. V.; Kudryavtsev, A. I. (USSR). Khimiya i Khimicheskaya  
Tekhnologiya (Minsk), 2, 18-21 (Russian) 1988. CODEN:  
KKTEDK. ISSN: 0136-3743.  
AB Amending a 60%  $\text{MgNaPO}_4$  suspension with 3%  $\text{NaH}_2\text{PO}_4$  decreased its angle  
of wetting urea granules to .apprx.11° from  
.apprx.15-18° for 3%  $\text{Na}_2\text{HPO}_4$ ,  $\text{KH}_2\text{PO}_4$ ,  $\text{K}_2\text{HPO}_4$ ,  $\text{NH}_4\text{H}_2\text{PO}_4$ , and  
( $\text{NH}_4$ ) $_2\text{HPO}_4$ , listed in order of increasing angle. Since no reaction  
between  $\text{NaH}_2\text{PO}_4$  and urea was found, it is assumed that  $\text{NaH}_2\text{PO}_4$   
increases the adhesion of  $\text{MgNaPO}_4$  to urea. Without adhesive, the  
wetting angle of 60-80%  $\text{MgNaPO}_4$  was slightly larger than that of  
 $\text{CaHPO}_4 + \text{MgHPO}_4$ . The strength of granules, contg. the coating at  
15-30 wt. % of urea, was 400-406 kPa and dissoln. was 53.8-36.8% over

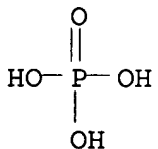
the 1st 7 days. The integrity of the capsule was not impaired during the dissoln.

IT 7558-79-4, Disodium phosphate 7558-80-7, Monosodium phosphate 7758-11-4, Dipotassium phosphate 7778-77-0, Monopotassium phosphate  
(as adhesive in urea encapsulation with magnesium sodium phosphate)  
RN 7558-79-4 HCA  
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



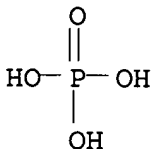
●2 Na

RN 7558-80-7 HCA  
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



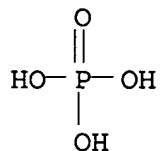
● Na

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



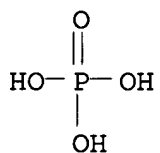
●2 K

RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)

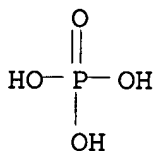


● K

IT 7664-38-2D, Phosphoric acid, monovalent  
cation salts  
(in urea encapsulation by magnesium sodium phosphate)  
RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

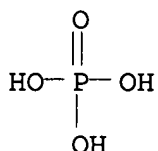


IT 7757-86-0 7757-93-9  
(urea encapsulation with, contact angle in relation to)  
RN 7757-86-0 HCA  
CN Phosphoric acid, magnesium salt (1:1) (CA INDEX NAME)



● Mg

RN 7757-93-9 HCA  
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

- CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
- IT **Fertilizers**  
 (urea, encapsulation of, by phosphate compns., contact angle optimization in)
- IT 7558-79-4, Disodium phosphate 7558-80-7, Monosodium phosphate 7722-76-1, Monoammonium phosphate 7758-11-4, Dipotassium phosphate 7778-77-0, Monopotassium phosphate 7783-28-0, Diammonium phosphate  
 (as adhesive in urea encapsulation with magnesium sodium phosphate)
- IT 57-13-6  
 (fertilizers, urea, encapsulation of, by phosphate compns., contact angle optimization in)
- IT 7664-38-2D, Phosphoric acid, monovalent cation salts  
 (in urea encapsulation by magnesium sodium phosphate)
- IT 7757-86-0 7757-93-9  
 (urea encapsulation with, contact angle in relation to)

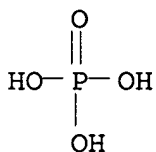
L47 ANSWER 36 OF 56 HCA COPYRIGHT 2010 ACS on STN

107:1750860 Original Reference No. 107:28091a,28094a Process for production of dialkali metal phosphates by ion exchange. Berry, W. Wes (Advanced Separation Technologies, Inc., USA). Eur. Pat. Appl. EP 230355 A2 19870729, 19 pp. APPLICATION: EP 1987-300137 19870108. PRIORITY: US 1986-818657 19860114.

AB The title process is carried out by first ammoniating a water-sol. phosphate source such as  $\text{H}_3\text{PO}_4$  or  $\text{CaHPO}_4$ . The resulting ammoniated phosphate soln. is then contacted with a weak cation-exchange resin in the alkali metal form to produce the dialkali metal phosphate as well as an  $\text{NH}_4^+$ -loaded weak cation exchange resin. The cation exchange resin is regenerated by contacting it with an alkali metal salt soln. which effects an exchange of alkali metal for  $\text{NH}_4^+$  to produce a regenerated weak cation exchange resin in the alkali metal form as well as a water-sol.  $\text{NH}_4^+$  salt corresponding to the initial alkali metal salt. The process may be carried out in conventional fixed or pulsed bed ion exchange systems although it is most advantageously carried out in an Advanced Sepn. Device (ASD), a multi-chambered device which enables the process to be carried out both continuously and with greater efficiency than is possible using conventional ion exchange systems.  $\text{CaHPO}_4$  was ammoniated by treatment

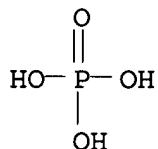
with gaseous NH<sub>3</sub> to pH 9, and the resulting soln. was fed into an ASD contg. a weak cation-exchange resin (K<sup>+</sup>). The product (pH 7) contained P<sub>2</sub>O<sub>5</sub> 5.56 and K<sub>2</sub>O 4.17% by wt. The NH<sub>4</sub><sup>+</sup>-loaded resin was regenerated using 18% aq. KCl.

IT 7758-11-4P, Dipotassium phosphate  
(manuf. of, by ion exchange)  
RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

IT 7758-23-8, Monocalcium phosphate  
(reaction of, with ammonia, in dialkali metal phosphate  
fertilizer manuf.)  
RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●1/2 Ca

IC ICM C01B025-30  
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 49  
ST phosphate metal fertilizer manuf; ion exchange  
fertilizer manuf  
IT Fertilizers  
(alkali metal phosphate, manufacturer of, by ion exchange)  
IT 7758-11-4P, Dipotassium phosphate  
(manuf. of, by ion exchange)  
IT 7758-23-8, Monocalcium phosphate  
(reaction of, with ammonia, in dialkali metal phosphate  
fertilizer manuf.)  
IT 7664-41-7, Ammonia, reactions  
(reaction of, with phosphate, in dialkali metal phosphate

fertilizer manuf.)

L47 ANSWER 37 OF 56 HCA COPYRIGHT 2010 ACS on STN

106:87167 Original Reference No. 106:14263a,14266a Low-temperature process for monopotassium phosphate manufacture without using organic solvents.. Iosef, Alexander; Bar-On, Menachem (Negev Phosphates Ltd., Israel). Eur. Pat. Appl. EP 208422 A2 19870114, 24 pp.

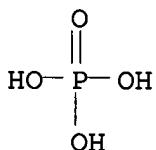
APPLICATION: EP 1986-304442 19860610. PRIORITY: IL1985-75767 19850710.

AB The title process yields high-purity  $\text{KH}_2\text{PO}_4$  (I) from the reaction of  $\text{KHSO}_4$  with, e.g., phosphate rock in the presence of  $\text{H}_3\text{PO}_4$  (II).  $\text{KHSO}_4$  408.3, II 288, water 1029, and phosphate rock (31.5%  $\text{P}_2\text{O}_5$ ) 182.6 g were mixed and heated at  $70^\circ$  for 1 h, after which addnl. phosphate rock 182.6 and II 25 g were added and heating continued 1 h. The mixt. was filtered, and  $\text{CaCO}_3$  94.4 g was added to the filtrate 1000 g at .apprx. $40^\circ$  to ppt.  $\text{Ca}_2\text{PO}_4$  which was sepd. Water 700% was evapd. from the filtrate and I crystals 122 g, contg. 22.7% moisture, were recovered, with compn.  $\text{P}_2\text{O}_5$  50.4,  $\text{K}_2\text{O}$  34.3,  $\text{CaO}$  0.8, and F 0.015%.

IT 7757-93-9P, Dicalcium phosphate  
(formation and reaction of, in monopotassium phosphate manuf. from phosphates and monopotassium sulfate)

RN 7757-93-9 HCA

CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)

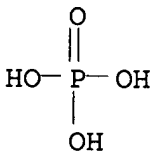


● Ca

IT 7758-11-4P, Dipotassium phosphate  
(formation of, in monopotassium phosphate manuf. from phosphates and monopotassium sulfate)

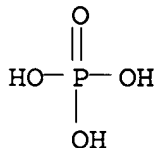
RN 7758-11-4 HCA

CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



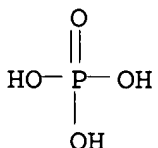
●2 K

IT 7778-77-0P, Monopotassium phosphate  
 (prepn. of high-purity, from phosphates and monopotassium sulfate,  
 for **fertilizer**)  
 RN 7778-77-0 HCA  
 CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IT 7664-38-2, **Phosphoric acid**, reactions  
 (reaction of, with phosphates and monopotassium sulfate, in  
 monopotassium phosphate manuf. for **fertilizer**)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



IC ICM C01B025-30  
 CC 49-5 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 19  
 ST potassium dihydrogen phosphate **fertilizer**  
 IT Phosphate rock and Phosphorite  
 (reaction of, with monopotassium sulfate, for monopotassium  
 phosphate prepn. for **fertilizer**)  
 IT **Fertilizers**  
 (potassium phosphate, manuf. of, from phosphates and monopotassium  
 sulfate)  
 IT 7757-93-9P, Dicalcium phosphate  
 (formation and reaction of, in monopotassium phosphate manuf. from  
 phosphates and monopotassium sulfate)  
 IT 7758-11-4P, Dipotassium phosphate  
 (formation of, in monopotassium phosphate manuf. from phosphates  
 and monopotassium sulfate)  
 IT 7778-77-0P, Monopotassium phosphate  
 (prepn. of high-purity, from phosphates and monopotassium sulfate,  
 for **fertilizer**)  
 IT 7664-93-9, Sulfuric acid, reactions

- (reaction of, with phosphate rock, **phosphoric acid** from, in monopotassium phosphate manuf.)
- IT 7664-38-2, **Phosphoric acid**, reactions  
(reaction of, with phosphates and monopotassium sulfate, in monopotassium phosphate manuf. for **fertilizer**)
- IT 7646-93-7, Monopotassium sulfate  
(reaction of, with phosphates, for monopotassium phosphate manuf. for **fertilizers**)

L47 ANSWER 38 OF 56 HCA COPYRIGHT 2010 ACS on STN

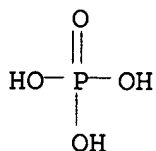
106:77893 Original Reference No. 106:12645a,12648a Determination of phosphorus by chemiluminescence measurements of the HPO species in a hydrogen flame. I. Determination of **phosphoric acid** using the nebulization technique. Hejtmanek, Milos; Krnak, Petr; Sulcova, Jitka (Dep. Anal. Chem., Prague Inst. Chem. Technol., Prague, 166 28, Czech.). Sbornik Vysoke Skoly Chemicko-Technologicke v Praze, H: Analyticka Chemie, H20, 119-31 (English) 1985. CODEN: SVSABU. ISSN: 0556-5294.

AB The conditions were optimized for the direct detn. of P by flame mol. emission spectrophotometry making use of the chemiluminescence of the HPO species formed by nebulization of **phosphoric acid** solns. with N into a diffusion H flame. The attained detection limit is 0.5 µg P/mL, the anal. curve was linear up to concns. of 250 µg P/mL, with a reproducibility of intensity measurements of about 2%. The emission is quenched by metal cations, which thus have to be removed, by ion exchange for instance. The minor interfering effect of anions of some acids can be eliminated by using the std. addn. method or by comparison with std. model solns. The method was applied to anal. for P in inorg. phosphates and in tech. lecithin and to the detn. of the water-sol. **phosphoric acid** in NPK-1 **fertilizer**. For lecithin, the org. matrix was destroyed by ashing with Mg(NO3)2.

IT 7664-38-2, **Phosphoric acid**, analysis  
(detn. of, by flame mol. emission spectrometry)

RN 7664-38-2 HCA

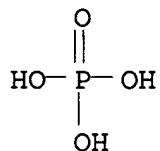
CN Phosphoric acid (CA INDEX NAME)



IT 7558-80-7, Sodium dihydrogen phosphate 7758-23-8, Calcium phosphate (Ca(H2PO4)2) 7778-77-0, Potassium dihydrogen phosphate  
(phosphorus detn. in, by flame mol. emission spectrometry)

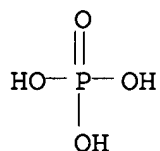
RN 7558-80-7 HCA

CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



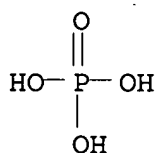
● Na

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

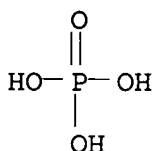
RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

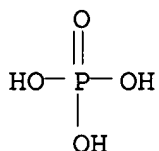
CC 79-6 (Inorganic Analytical Chemistry)  
Section cross-reference(s): 19  
ST phosphorus detn chemiluminescence; hydrogen flame phosphorus detn  
chemiluminescence; phosphoric acid detn chemiluminescence; phosphate  
analysis phosphorus detn chemiluminescence; **fertilizer**  
analysis phosphoric acid chemiluminescence; lecithin analysis  
phosphorus chemiluminescence; mol emission analysis phosphorus detn  
IT **Fertilizer** analysis  
(phosphoric acid detn. in, by flame mol.  
emission spectrometry)  
IT 7664-38-2, Phosphoric acid, analysis  
7723-14-0, Phosphorus, analysis

- (detn. of, by flame mol. emission spectrometry)
- IT 7558-80-7, Sodium dihydrogen phosphate 7758-23-8, Calcium phosphate (Ca(H<sub>2</sub>PO<sub>4</sub>)<sub>2</sub>) 7778-77-0, Potassium dihydrogen phosphate 7790-76-3, Calcium phosphate (Ca<sub>2</sub>P<sub>2</sub>O<sub>7</sub>) (phosphorus detn. in, by flame mol. emission spectrometry)
- L47 ANSWER 39 OF 56 HCA COPYRIGHT 2010 ACS on STN
- 106:69678 Original Reference No. 106:11449a,11452a Potassium phosphate production by ion exchange. Berry, W. Wes; Erickson, William R. (Progress Equities, Inc., USA). Eur. Pat. Appl. EP 205708 A2 19861230, 25 pp. APPLICATION: EP 1985-308710 19851129. PRIORITY: US 1985-748187 19850624.
- AB A process and app. for producing K phosphates by ion exchange are described. The app. comprises an Advanced Sepn. Device (ASD) to which a phosphate soln., a washing soln., and a regeneration soln., e.g., aq. KCl are supplied via various feed ports which are in periodic fluid communication with a plurality of ion-exchange resin-filled chambers moving about a circular path. Passage of the phosphate soln. through the K-loaded resin chambers forms K phosphate soln. and, e.g., Ca-loaded resin, which is regenerated by washing with, e.g., aq. KCl. K phosphate is produced continuously with greater efficiency than by conventional ion-exchange processes, since the K salt and phosphate salt feed solns. may be fortified in intra-stage steps, thus overcoming, e.g., the limited soly. of Ca phosphates. Addnl., the nature of the ASD allows effective use of low-capacity ion-exchange resins.
- IT 10043-83-1, Magnesium phosphate 10103-46-5, Calcium phosphate (ion exchange of, for potassium phosphate manuf., app. for)
- RN 10043-83-1 HCA
- CN Phosphoric acid, magnesium salt (1:?) (CA INDEX NAME)



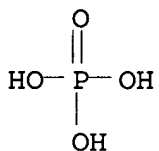
●x Mg

- RN 10103-46-5 HCA
- CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



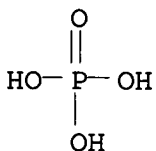
●x Ca

IT 16068-46-5P, Potassium phosphate  
 (prepn. of, by ion exchange of phosphate solns., app. for)  
 RN 16068-46-5 HCA  
 CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

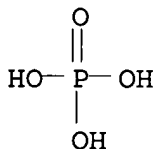
IT 7664-38-2, Phosphoric acid, reactions  
 (reaction of, with phosphate rock, calcium phosphate solns. from,  
 for potassium phosphate manuf.)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



IC ICM C01B025-30  
 ICS B01J047-00  
 CC 49-5 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 19  
 IT 10043-83-1, Magnesium phosphate 10103-46-5, Calcium  
 phosphate 10402-24-1  
 (ion exchange of, for potassium phosphate manuf., app. for)  
 IT 16068-46-5P, Potassium phosphate  
 (prepn. of, by ion exchange of phosphate solns., app. for)  
 IT 7664-38-2, Phosphoric acid, reactions

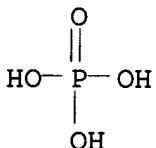
7664-93-9, Sulfuric acid, reactions  
(reaction of, with phosphate rock, calcium phosphate solns. from,  
for potassium phosphate manuf.)

- L47 ANSWER 40 OF 56 HCA COPYRIGHT 2010 ACS on STN  
104:108538 Original Reference No. 104:17183a,17186a Correction of soil  
acidity. Gattys, Franz Josef; Boguslawski, Zbigniew (Gattys Technique  
S. A., Switz.). Ger. Offen. DE 3426811 A1 **19860130**, 12 pp.  
(German). CODEN: GWXXBX. APPLICATION: DE 1984-3426811 19840720.  
AB Sorel cement  $[MgCl_2 \cdot 3Mg(OH)_2 \cdot 8H_2O]$  pellets, contg.  $CaCO_3$  or  $Ca(OH)_2$ ,  
covered with a low-soly. layer of  $Mg_3(P_4)_2$ ,  $MgNH_4PO_4$ , or  $Mg(H_2PO_4)_2$ ,  
are used for tile purpose. Thus, pellets (1 mm) were made of 30 g  
 $MgO$ , 13 kg 50%  $H_2O$ , and 58 kg satd.  $MgCl_2$ . The pellets were mixed  
with 4 kg  $H_3PO_4$  and subsequently with 100 kg  $CaCO_3$  powder,  
followed by the addn. of 10% by wt.  $CaO$  and/or  $MgO$  and a 2nd treatment  
with 4 kg 50%  $H_3PO_4$ .  
IT **7757-87-1 13092-66-5**  
(as coat, for soil acidity-correcting Sorel cement pellets)  
RN 7757-87-1 HCA  
CN Phosphoric acid, magnesium salt (2:3) (CA INDEX NAME)



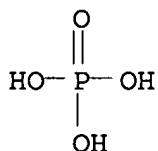
● 3/2 Mg

- RN 13092-66-5 HCA  
CN Phosphoric acid, magnesium salt (2:1) (CA INDEX NAME)



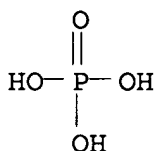
● 1/2 Mg

- IT **7558-79-4 7664-38-2**, biological studies  
(in soil acidity-correcting pellet manuf., with Sorel cement)  
RN 7558-79-4 HCA  
CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



IC ICM C09K017-00  
 ICS A01G007-06; C05D011-00; C05G001-00; C05G005-00  
 CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
 IT 7757-87-1 7785-21-9 13092-66-5  
 (as coat, for soil acidity-correcting Sorel cement pellets)  
 IT 7558-79-4 7664-38-2, biological studies  
 (in soil acidity-correcting pellet manuf., with Sorel cement)

L47 ANSWER 41 OF 56 HCA COPYRIGHT 2010 ACS on STN  
 100:39056 Original Reference No. 100:5969a,5972a Water recycle and reuse  
 potential in the inorganic chemicals industry. Rissmann, Edwin F.;  
 LeBoff, J. P.; Hillis, P. A.; Twedell, A. M.; Garvin, Jay (Versar  
 Inc., Springfield, VA, 22151, USA). Proceedings - Water Reuse  
 Symposium, Volume Date 1981 (1), 640-59 (English) 1982.  
 CODEN: PWRSDL.

AB Water reuse and recycling was assessed in the inorg. chems. industry  
 in the US (including in the manuf. of alkalies and Cl, industrial  
 gases, inorg. pigments, unclassified industrial inorg. chems.,  
 nitrogenous **fertilizers**, and phosphatic **fertilizers**  
 ). The status of water recycle is summarized on a product by-product  
 basis for 30 product segments, each having a gross water use  
 requirement >1 million gal/day. While there is potential for a  
 considerable amt. of increased recycle in this industry, particularly  
 of cooling water, the bulk of the industry is located in water excess  
 areas (i.e., eastern US and Gulf Coast) and has had no incentive to  
 modify existing water use practices beyond those needed to meet  
 environmental regulations. Increased water recycling is likely to be  
 more attractive in product segment areas influenced by new process  
 technol. or located in water deficient areas.

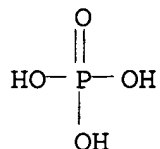
IT 7632-05-5P 7664-38-2P, preparation

**10103-46-5P**

(manuf. of, water recycling and reuse in, in US)

RN 7632-05-5 HCA

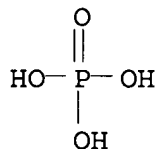
CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)



●x Na

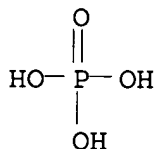
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 10103-46-5 HCA

CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

CC 60-6 (Waste Treatment and Disposal)

Section cross-reference(s): 49, 61

IT 497-19-8P, preparation 1314-13-2P, preparation 1333-73-9P  
 1344-09-8P 1344-28-1P, preparation 5329-14-6P 6484-52-2P,  
 preparation 7447-40-7P, preparation **7632-05-5P**  
 7647-01-0P, preparation 7647-14-5P, preparation **7664-38-2P**  
 , preparation 7664-39-3P, preparation 7664-41-7P, preparation  
 7664-93-9P, preparation 7697-37-2P, preparation 7722-84-1P,  
 preparation 7723-14-0P, preparation 7775-09-9P 7778-18-9P  
 7782-50-5P, preparation 7783-20-2P, preparation 10043-01-3P  
**10103-46-5P** 10588-01-9P 13463-67-7P, preparation

(manuf. of, water recycling and reuse in, in US)

L47 ANSWER 42 OF 56 HCA COPYRIGHT 2010 ACS on STN

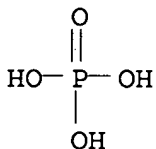
98:190654 Original Reference No. 98:28775a,28778a Study of the polymerization of phosphates under conditions of an acid-thermal process in model systems. Bekturov, A. B.; Serazetdinov, D. Z.; Kim, M. Kh.; Polyanskaya, T. S.; Shayakhmetova, G. Sh. (USSR). Trudy Instituta Khimicheskikh Nauk, Akademiya Nauk Kazakhskoi SSR, 56, 3-21 (Russian) 1981. CODEN: TIKNAG. ISSN: 0568-5087.

AB With the use of thermodyn. anal. of the decompn. processes of components of complex natural raw materials of  $H_3PO_4$ , the conditions for the decompn. processes and the most probable decompn. products were detd. The possibility of formation, under conditions of polycondensation, of binary compds. was established exptl. and on the basis of the thermodyn. anal. These binary compds. are also formed in the corresponding metaphosphate systems during crystn. from melts. During polycondensation, independent of the compn., the formation of phosphate fragments begins long before equil. is established. With respect to this, the properties of the polycondensation products in the  $MH_2PO_4$ - $M_1(H_2PO_4)_2$  system ( $M$  = alkali metal,  $M_1$  = alk. earth) correlate with those of the products in the  $MPO_3$ - $M_1(PO_3)_2$  system in the cryst. and amorphous states.

IT 7664-38-2, reactions  
(reaction of, inorg. compds.)

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

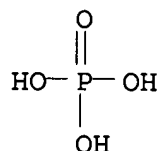


IT 7758-23-8

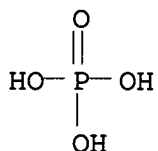
(reaction of, with potassium dihydrogen phosphate and thermodyn. of decompn. of)

RN 7758-23-8 HCA

CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)

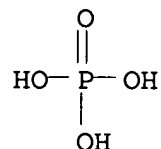


IT 7778-77-0  
 (reactions of, with divalent metal dihydrogen phosphates, thermodyn.  
 of)  
 RN 7778-77-0 HCA  
 CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IT 7758-87-4  
 (thermodyn. of reaction of, with **phosphoric acid**  
 )  
 RN 7758-87-4 HCA  
 CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●<sub>3/2</sub> Ca

CC 78-9 (Inorganic Chemicals and Reactions)  
 Section cross-reference(s): 19, 69  
 IT Heat of reaction  
 (of **phosphoric acid** and phosphates)  
 IT Entropy  
 Free energy  
 Thermodynamics  
 (of reaction of **phosphoric acid** and phosphates)  
 IT 7664-38-2, reactions  
 (reaction of, inorg. compds.)  
 IT 7758-23-8  
 (reaction of, with potassium dihydrogen phosphate and thermodyn. of  
 decompn. of)  
 IT 7778-77-0  
 (reactions of, with divalent metal dihydrogen phosphates, thermodyn.  
 of)  
 IT 471-34-1, reactions 497-19-8, reactions 546-93-0 584-08-7

6834-92-0 7447-40-7, reactions 7487-88-9, reactions 7647-14-5,  
reactions 7757-82-6, reactions **7758-87-4** 7778-18-9  
7778-80-5, reactions 10006-28-7 10101-39-0 12015-73-5  
13776-74-4

(thermodn. of reaction of, with **phosphoric acid**  
)

L47 ANSWER 43 OF 56 HCA COPYRIGHT 2010 ACS on STN

93:69936 Original Reference No. 93:11391a,11394a Monocalcium phosphate  
and **phosphoric acid** by acidulation of natural  
phosphate with **phosphoric acid**. Drechsel, Erhart  
Karl (Pennzoil Co., USA). Belg. BE 876325 **19791119**, 22 pp.  
(French). CODEN: BEXXAL. APPLICATION: BE 1979-195218 19790517.

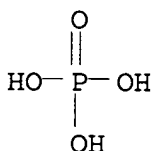
AB **H3PO4** and  $\text{CaH}_4(\text{PO}_4)_2$ , free of fluorides, Fe, Al, Mg and  
other impurities, are produced by acidification of natural phosphate  
with **H3PO4** in the presence of  $\text{SiO}_2$  and  $\text{K}^+$ , so that fluorides  
are recovered initially as  $\text{K}_2\text{SiF}_6$ , then as Ca fluoride. Thus, 1.278 g  
P2O5 as natural phosphate was reacted with 10.224 g P2O5 as recycled  
35% **H3PO4** at 80-90° in the presence of  $\geq 1$  mol  
K2O and sufficient  $\text{SiO}_2$  to remove  $\text{F}^-$  as  $\text{K}_2\text{SiF}_6$ . The sediments, contg.  
unreacted natural phosphate as well as  $\text{K}_2\text{SiF}_6$ , were decanted, then  
hydrolyzed at 110-115°. Sediments then contained dense  $\text{CaF}_2$   
crystals easily sepd. from the mixt., which was treated with  
sufficient gypsum [13397-24-5] to yield a 0-20-0 **fertilizer**  
. After sepn. of solids, the remaining soln. of 2  $\text{KH}_2\text{PO}_4$  + 14  
**H3PO4** was recycled.

IT **7664-38-2P**, preparation **7758-23-8P**  
**7778-77-0P**

(manuf. of, by acidification of phosphate rock)

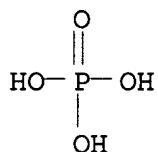
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 7758-23-8 HCA

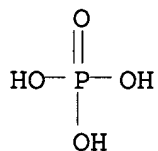
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

IC C01B

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

Section cross-reference(s): 49

ST calcium phosphate manuf; rock phosphate **phosphoric acid**; fluoride removal calcium phosphate

IT Phosphate rock and Phosphorite  
(calcium phosphate and **phosphoric acid** manuf.  
by acidification of)

IT **Fertilizers**  
(calcium phosphate, manuf. of, by acidification of phosphate rock)

IT **Fertilizers**  
(potassium phosphate, manuf. of, by acidification of phosphate  
rock)

IT 7789-75-5, biological studies  
(as by-product of calcium phosphate and **phosphoric acid** manufd. by acidification of phosphate rock)

IT 9056-87-5  
(in calcium phosphate and **phosphoric acid**  
manufd. by acidification of phosphate rock)

IT 7631-86-9, biological studies  
(in calcium phosphate and **phosphoric acid**  
manufd. by acidification of phosphate rock)

IT 13397-24-5P, biological studies  
(manuf. and use of, in **fertilizer** manuf.)

IT 7664-38-2P, preparation 7758-23-8P

**7778-77-0P**

(manuf. of, by acidification of phosphate rock)

L47 ANSWER 44 OF 56 HCA COPYRIGHT 2010 ACS on STN

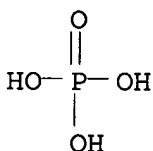
91:122652 Original Reference No. 91:19793a,19796a The nature of the phosphate-goethite ( $\alpha$ -FeOOH) complex formed with calcium orthophosphate at different surface coverage. Parfitt, R. L. (Soil Bur., DSIR, Lower Hutt, N. Z.). Soil Science Society of America Journal, 43(3), 623-5 (English) 1979. CODEN: SSSJD4. ISSN: 0361-5995.

AB Basic information on the reaction between  $\text{Ca}(\text{H}_2\text{PO}_4)_2$ ,  $\text{NaH}_2\text{PO}_4$ ,  $\text{H}_3\text{PO}_4$ , and the F oxide goethite [1310-14-1] ( $\alpha$ -FeOOH) was obtained prior to a study of the desorption of phosphate by plants. IR spectra of the wet phosphate-goethite complexes suggested that the binuclear bridging complex was present with all these phosphates over the whole range from low surface coverage to max. surface coverage. Max. adsorption was obsd. when  $\text{Ca}(\text{H}_2\text{PO}_4)_2$  was used with 0.01M  $\text{CaCl}_2$  as the supporting electrolyte. The adsorption isotherms with phosphate and fluoride ( $\text{NaF}$ ) reached a max. value which indicated that there were 460 to 480  $\mu\text{mol}$  of reactive A type OH groups on goethite. There was no evidence for phosphate adsorbed in any other form than the surface bridging complex which is formed very rapidly.

IT 7558-80-7 7664-38-2, reactions 7757-93-9  
(reaction of, with goethite)

RN 7558-80-7 HCA

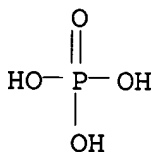
CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



● Na

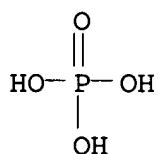
RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)



RN 7757-93-9 HCA

CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

CC 19-2 (Fertilizers, Soils, and Plant Nutrition)

IT 7558-80-7 7664-38-2, reactions 7757-93-9  
(reaction of, with goethite)

L47 ANSWER 45 OF 56 HCA COPYRIGHT 2010 ACS on STN

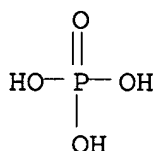
90:85859 Original Reference No. 90:13601a,13604a Thermodynamics of the neutralization of acidic sulfate-containing potassium polyphosphates by calcium compounds. Namazov, Sh. S.; Radzhabov, R.; Aslanov, Kh. (Inst. Khim., Tashkent, USSR). Uzbekskii Khimicheskii Zhurnal (3), 15-21 (Russian) 1978. CODEN: UZKZAC. ISSN: 0042-1707.

AB Based on data of the thermodyn. anal. of neutralization of products of KCl decompn. with mixts. of wet-process phosphoric and polyphosphoric acids with H<sub>2</sub>SO<sub>4</sub>, it was found that the phase compn. of the title **fertilizers** should consist of K polyphosphate, K<sub>2</sub>SO<sub>4</sub>, and Ca K-Ca (at various substitution degrees) phosphates and polyphosphates. Thermodyn. values (heat of reaction and entropy at 298°K) for individual compds. and the thermodyn. anal. of the neutralization process which included also a detn. of the Gibbs energy at 298 and 473°K (the latter is the optimum neutralization temp.) are presented.

IT 7778-77-0  
(neutralization of, with calcium compds., thermodyn. of)

RN 7778-77-0 HCA

CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)

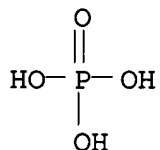


● K

IT 7757-93-9 7758-23-8 7758-87-4  
(thermodyn. parameters of)

RN 7757-93-9 HCA

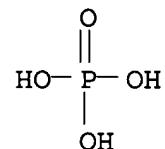
CN Phosphoric acid, calcium salt (1:1) (CA INDEX NAME)



● Ca

RN 7758-23-8 HCA

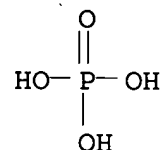
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



● 1/2 Ca

RN 7758-87-4 HCA

CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



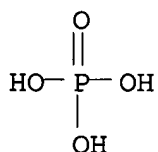
● 3/2 Ca

IT 7664-38-2, reactions

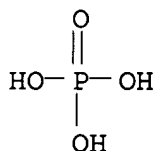
(wet-process, neutralization with calcium compds., thermodyn. of)

RN 7664-38-2 HCA

CN Phosphoric acid (CA INDEX NAME)

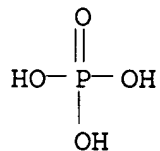


- CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 49
- IT 2466-09-3 7778-77-0 7790-53-6 10343-62-1 14691-84-0  
16270-75-0 16270-76-1  
(neutralization of, with calcium compds., thermodyn. of)
- IT 7757-93-9 7758-23-8 7758-87-4 7790-76-3  
14866-19-4 18901-69-4 21686-69-1 35325-92-9 35325-93-0  
35325-94-1 35405-51-7 35405-52-8 35560-46-4 35560-48-6  
35561-42-3 35561-44-5  
(thermodyn. parameters of)
- IT 7664-38-2; reactions  
(wet-process, neutralization with calcium compds., thermodyn. of)
- L47 ANSWER 46 OF 56 HCA COPYRIGHT 2010 ACS on STN  
90:5182 Original Reference No. 90:987a,990a Study of the composition of  
phosphorus-containing components of Cottrell dust. Serazetdinov, D.  
Z.; Kim, M. Kh.; Kozhevnikova, V. P.; Bekturov, A. B. (USSR). Trudy  
Instituta Khimicheskikh Nauk, Akademiya Nauk Kazakhskoi SSR, 44, 30-3  
(Russian) 1977. CODEN: TIKNAG. ISSN: 0568-5087.
- AB The P-contg. part of dust from Cottrell pptn. consisted mainly of  
ortho- and pyrophosphates of alk. and alkali earth metals and Si,  
**phosphoric acid** of various condensation degree, and  
CaKP3O9.
- IT 7601-54-9 7758-23-8 7778-53-2  
13092-66-5  
(in dust from Cottrell pptn.)
- RN 7601-54-9 HCA
- CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



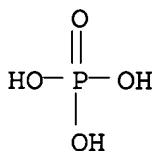
●3 Na

- RN 7758-23-8 HCA
- CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



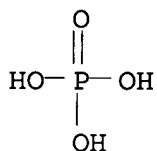
● 1/2 Ca

RN 7778-53-2 HCA  
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



● 3 K

RN 13092-66-5 HCA  
CN Phosphoric acid, magnesium salt (2:1) (CA INDEX NAME)



● 1/2 Mg

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

Section cross-reference(s): 49

IT 7601-54-9 7758-23-8 7778-53-2

13092-66-5 39661-99-9 51404-74-1

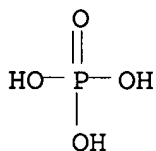
(in dust from Cottrell pptn.)

L47 ANSWER 47 OF 56 HCA COPYRIGHT 2010 ACS on STN

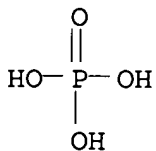
89:22980 Original Reference No. 89:3591a,3594a Decomposition of phosphorite from the Chilisai formation using **phosphoric acid** with potassium phosphate and magnesium phosphate impurities. Niyazberdyeva, M.; Yakhontova, E. L.; Karmyshov, V. F.; Popova, V. A. (Mosk. Khim.-Tekhnol. Inst., Moscow, USSR).

Fiziko-Khimicheskie Osnovy i Tekhnologiya Pererabotki Khimicheskogo Syr'ya, 2, 124-7 (Russian) 1976. CODEN: FOTSDZ. ISSN: 0136-8486.

- AB In the absence of the impurities, the optimum conditions for decompn. (97%) the title phosphorite at 80° were: P2O5 concn. of **H3PO4** 20-30%, acid rate 300% of stoichiometric (based on Ca content), and reaction time ≥1 h. An impurity of 1% K2O is permissible but a 1% MgO impurity decreased the decompn. to 87%. At 4% MgO in the soln. the decompn. decreased to 28.11%; a 4% K2O concn. decreased the decompn. to 87.5% and an increase in K2O content to 6% decreased the decompn. by an addnl. 18%.
- IT **7664-38-2**, reactions  
(decompn. by, of phosphorite, magnesium and potassium phosphate impurity effect on)
- RN 7664-38-2 HCA
- CN Phosphoric acid (CA INDEX NAME)

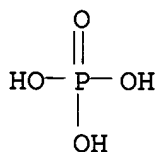


- IT **7778-53-2 10043-83-1**  
(phosphorite decompn. by **phosphoric acid** contg.)
- RN 7778-53-2 HCA
- CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



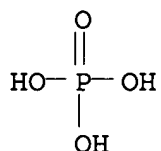
● 3 K

- RN 10043-83-1 HCA
- CN Phosphoric acid, magnesium salt (1:?) (CA INDEX NAME)

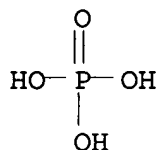


●x Mg

- CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 49
- ST phosphorite decompn **phosphoric acid** impurity;  
potassium phosphorite decompn **phosphoric acid**;  
magnesium phosphorite decompn **phosphoric acid**
- IT Phosphate rock and Phosphorite  
(decompn. of, magnesium and potassium phosphate impurities in  
**phosphoric acid** effect on, from Chilisai)
- IT 7664-38-2, reactions  
(decompn. by, of phosphorite, magnesium and potassium phosphate  
impurity effect on)
- IT 7439-95-4, uses and miscellaneous 7440-09-7, uses and miscellaneous  
(interference by, in phosphorite decompn. by **phosphoric acid**)
- IT 7778-53-2 10043-83-1  
(phosphorite decompn. by **phosphoric acid**  
contg.)
- L47 ANSWER 48 OF 56 HCA COPYRIGHT 2010 ACS on STN  
88:36426 Original Reference No. 88:5743a,5746a Preparation of  
chlorine-free polyphosphate phosphorus-potassium **fertilizers**  
. Gruncharov, I.; Kurshev, I.; Pelovski, I.; Tudzharova, F.;  
Bozhinov, G. (Bulg.). Godishnik na Visshiya Khimikotekhnologicheski  
Institut, Sofiya, 22(4), 235-43 (Bulgarian) 1977. CODEN:  
GVKIAH. ISSN: 0489-6211.
- AB The kinetics of the decompn. of KCl by wet process **H3PO4** and  
H2SO4 were detd. Optimum conditions for the decompn. were:  
130-140° for 30-40 min. The energy of activation for the  
decompn. was detd. as 32.4 kcal/mol. Optimum conditions for the  
dehydration of Ca and K orthophosphates were established as  
350° for 30-60 min. The kinetics of these dehydrations were  
also studied.
- IT 7664-38-2, reactions  
(decompn. by, of potassium chloride, sulfuric acid in)
- RN 7664-38-2 HCA
- CN Phosphoric acid (CA INDEX NAME)

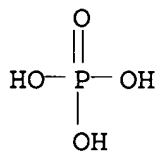


IT 10103-46-5 16068-46-5  
 (dehydration of, in fertilizer manuf., kinetics of)  
 RN 10103-46-5 HCA  
 CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA  
 CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
 ST **fertilizer** polyphosphate potassium phosphorus; potassium  
 chloride acid decompn  
 IT **Fertilizers**  
 (phosphorus-potassium, chlorine-free polyphosphate, prepn. of)  
 IT 7664-93-9, reactions  
 (decompn. by, of potassium chloride, **phosphoric**  
**acid** in)  
 IT 7664-38-2, reactions  
 (decompn. by, of potassium chloride, sulfuric acid in)  
 IT 10103-46-5 16068-46-5  
 (dehydration of, in fertilizer manuf., kinetics of)

L47 ANSWER 49 OF 56 HCA COPYRIGHT 2010 ACS on STN

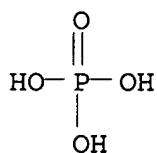
84:16155 Original Reference No. 84:2671a,2674a Production of complex **fertilizers** from phosphorus industry wastes. Serazetdinov, D. Z.; Kim, M. Kh.; Kruchinina, A. D.; Evtushenko, G. K.; Isina, A. S.; Voronin, G. V. (USSR). Trudy Instituta Khimicheskikh Nauk, Akademiya Nauk Kazakhskoi SSR, 38, 27-35 (Russian) 1974. CODEN: TIKNAG. ISSN: 0568-5087.

AB In polycondensation expts. it was shown that  $\text{NaH}_2\text{PO}_4$  [7558-80-7] interferes in formation of mixed trimetaphosphates and therefore the latter should be produced from  $\text{NH}_4$ , K, and Ca liquors only or from solns. of  $\text{KH}_2\text{PO}_4$  [7778-77-0],  $\text{NH}_4\text{H}_2\text{PO}_4$  [7722-76-1], and  $\text{Ca}(\text{H}_2\text{PO}_4)_2$  [7758-23-8] using the process system  $\text{KPO}_3\text{-Ca}(\text{PO}_3)_2\text{-Mg}(\text{PO}_3)_2$ . Complex concd. **fertilizers** were also obtained from the Cottrell ppt. by its degrdn. with  **$\text{H}_3\text{PO}_4$**  followed by fusing of the materials. Chem. and physicochem. properties of the product depend on the metal oxide/ $\text{P}_2\text{O}_5$  ratio. The vitreous materials obtained at a metal oxide/ $\text{P}_2\text{O}_5$  ratio 1 had a higher content of available  $\text{P}_2\text{O}_5$  than those obtained at 1.2 and 1.4 ratios. Technol. processes of the **fertilizer** prodn. are presented.

IT 7558-80-7  
(interferences by, in trimetaphosphate polycondensation)

RN 7558-80-7 HCA

CN Phosphoric acid, sodium salt (1:1) (CA INDEX NAME)



● Na

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

Section cross-reference(s): 49

ST waste phosphorus industry **fertilizer**

IT Dust

(Cottrell, complex **fertilizers** from)

IT **Fertilizers**

(complex, contg. trimeta phosphates, manuf. from industrial wastes)

IT Wastes

(from phosphorus industry, in complex **fertilizer** manuf.)

IT Precipitation, electric

(wastes from, in complex **fertilizer** manuf.)

IT **Phosphoric acid**, calcium salt (2:1), condensation products with acid phosphates

**Phosphoric acid**, monoammonium salt, condensation products with acid phosphates

**Phosphoric acid, monopotassium salt, condensation  
products with acid phosphates  
(as fertilizers)**

IT 7558-80-7  
(interferences by, in trimetaphosphate polycondensation)

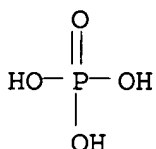
L47 ANSWER 50 OF 56 HCA COPYRIGHT 2010 ACS on STN  
77:166737 Original Reference No. 77:27369a,27372a Increasing the  
solubility of defluorinated phosphates from phosphorites. Veiderma,  
M.; Karus, A. (Tallin. Politekh. Inst., Tallin, USSR). Issled. Obl.  
Neorg. Tekhnol., 140-4. Editor(s): Pozin, M. E. 'Nauka',  
Leningrad. Otd.: Leningrad, USSR. (Russian) 1972. CODEN:  
25PFAL.

AB The effect of  $H_3PO_4$  and  $Na_2CO_3$  addn. in the defluorination  
process of phosphorites at 1200-1300° on the soly. of  
defluorinated phosphates in 2 citric acid was studied. The best  
results were obtained with mole ratios for  $CaO:P_2O_5$  and  $Na_2O:P_2O_5$  of 3  
and 0.45, resp. The coeff. of defluorination and the soly. increased  
from 85% and 35% to 95% and 95%, resp. when optimum amts. of  
 $H_3PO_4$  and  $Na_2CO_3$  were added to the reaction melt.

IT 7632-05-5P 7758-87-4P  
(from phosphate rock, soly. in relation to **phosphoric  
acid** and sodium carbonate addn. in deffluorination in)

RN 7632-05-5 HCA

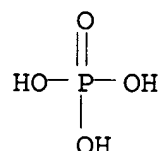
CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)



●x Na

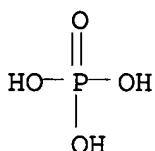
RN 7758-87-4 HCA

CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



●3/2 Ca

IT 7664-38-2, reactions  
 (in defluorination, of phosphate rock, phosphate soly. in relation to)  
 RN 7664-38-2 HCA  
 CN Phosphoric acid (CA INDEX NAME)



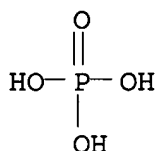
CC 49-5 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 19  
 IT Defluorination  
 (of phosphate rock, by **phosphoric acid** and sodium carbonate, phosphate soly. in relation to)  
 IT 7632-05-5P 7758-87-4P  
 (from phosphate rock, soly. in relation to **phosphoric acid** and sodium carbonate addn. in deffluorination in)  
 IT 497-19-8, reactions 7664-38-2, reactions  
 (in defluorination, of phosphate rock, phosphate soly. in relation to)

L47 ANSWER 51 OF 56 HCA COPYRIGHT 2010 ACS on STN

65:36844 Original Reference No. 65:6821d-e Corrosion of iron in molten chlorides and phosphates of alkali metals and of calcium. Kochergin, V. P.; Shevrina, Z. A.; Fomina, T. P. Zashchita Metallov, 2(3), 318-22 (Russian) 1966. CODEN: ZAMEA9. ISSN: 0044-1856.

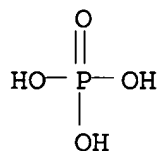
AB A study was made of the corrosion of polished specimens of Armco iron in mixts. of molten chem. pure salts: LiPO3-LiCl; Li4P2O7-LiCl; Li3PO4-LiCl; NaPO3-NaCl; Na4P2O7-NaCl; NaPO4-NaCl; NaPO3-NaF; KPO3-KCl; K4P2O7-KCl; K3PO4-KCl; Ca-(PO3)2-CaCl2; Ca2P2O7-CaCl2, and Ca3(PO4)2-CaCl2. The mean corrosion rate as shown by loss in wt. in 1-hr. tests at 1st increased, in all mixts., with increasing phosphate content, then decreased. The corrosion rate of iron decreased with the time of testing and with decrease in temp. The rate in molten salts that had been held in a vacuum or in a N atm. is lower than in melts that had not been so treated. Wustite is formed on the surface of Fe in chloride-orthophosphate melts, magnetite in chloride-monophosphate melts, and polymer phosphates and iron phosphates in chloride-metaphosphate melts. 35 references.

IT 7601-54-9, Sodium phosphate (Na3PO4)  
 (corrosion of Fe by liquid)  
 RN 7601-54-9 HCA  
 CN Phosphoric acid, sodium salt (1:3) (CA INDEX NAME)



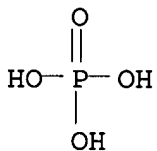
●3 Na

IT 7758-87-4, Calcium phosphate,  $\text{Ca}_3(\text{PO}_4)_2$  7778-53-2,  
Potassium phosphate,  $\text{K}_3\text{PO}_4$  10377-52-3, Lithium phosphate,  
 $\text{Li}_3\text{PO}_4$   
(iron corrosion by liquid)  
RN 7758-87-4 HCA  
CN Phosphoric acid, calcium salt (2:3) (CA INDEX NAME)



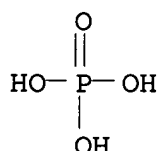
●3/2 Ca

RN 7778-53-2 HCA  
CN Phosphoric acid, potassium salt (1:3) (CA INDEX NAME)



●3 K

RN 10377-52-3 HCA  
CN Phosphoric acid, lithium salt (1:3) (CA INDEX NAME)

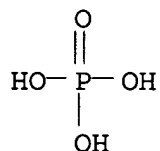


●3 Li

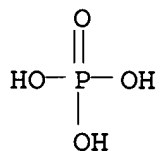
- CC 19 (Ferrous Metals and Alloys)
- IT 7601-54-9, Sodium phosphate ( $\text{Na}_3\text{PO}_4$ ) 13762-75-9, Lithium metaphosphate  
(corrosion of Fe by liquid)
- IT 10402-24-1P, Iron phosphate  
(formation in  $(\text{NH}_4)_2\text{HPO}_4$  manuf. from  $\text{NH}_3$ -contg. coke gas and Fe-contg.  $\text{H}_3\text{PO}_4$ , on Fe in liquid chloride-metaphosphate)
- IT 7320-34-5, Potassium pyrophosphate,  $\text{K}_4\text{P}_2\text{O}_7$  7447-40-7, Potassium chloride 7447-41-8, Lithium chloride 7647-14-5, Sodium chloride 7681-49-4, Sodium fluoride 7722-88-5, Sodium pyrophosphate,  $\text{Na}_4\text{P}_2\text{O}_7$  7758-87-4, Calcium phosphate,  $\text{Ca}_3(\text{PO}_4)_2$  7778-53-2, Potassium phosphate,  $\text{K}_3\text{PO}_4$  7790-53-6, Potassium metaphosphate 7790-76-3, Calcium pyrophosphate,  $\text{Ca}_2\text{P}_2\text{O}_7$  10377-52-3, Lithium phosphate,  $\text{Li}_3\text{PO}_4$  13477-39-9, Calcium metaphosphate,  $\text{Ca}(\text{PO}_3)_2$  13843-41-9, Lithium pyrophosphate,  $\text{Li}_4\text{P}_2\text{O}_7$   
(iron corrosion by liquid)
- L47 ANSWER 52 OF 56 HCA COPYRIGHT 2010 ACS on STN
- 49:85085 Original Reference No. 49:16086d-f The apparent absorption of phosphorus and magnesium from sprays applied to the lower surface of McIntosh apple leaves. Fisher, Elwood G.; Walker, David R. (Cornell Univ., Ithaca, NY). Proc. Am. Soc. Hort Sci., 65, 17-24 (Unavailable) 1955.
- AB Absorption was detd. by noting the quantities not recoverable by washing the leaves after spraying. Young leaves absorbed P more rapidly than old leaves. Of the P compds. tested,  $\text{H}_3\text{PO}_4$  was absorbed most rapidly,  $\text{NH}_4\text{H}_2\text{PO}_4$  and  $\text{KH}_2\text{PO}_4$  somewhat more slowly, and  $\text{Mg}(\text{H}_2\text{PO}_4)_2$  the slowest. Mg was absorbed most rapidly from  $\text{Mg}(\text{NO}_3)_2$  and  $\text{MgCl}_2$ , slightly less from  $\text{Mg}(\text{OAc})_2$ , and most slowly from  $\text{MgSO}_4$  and  $\text{Mg}(\text{H}_2\text{PO}_4)_2$ . Glycerol in the spray soln. increased P absorption but had little effect on Mg uptake. Triton X100 increased P absorption and decreased Mg absorption.  $\text{MgSO}_4$  reduced urea absorption but urea had no effect on Mg uptake. Urea, EDTA, formamide, and methylcellulose had no effect on P absorption and Mg absorption was unaffected by methylcellulose, Carbowax, naphthaleneacetic acid, 2,4-dichloroanisole, methylurea, or  $\text{K}_2\text{SO}_4$ .
- IT 7664-38-2, Phosphoric acid  
7778-77-0, Potassium phosphate,  $\text{KH}_2\text{PO}_4$  13092-66-5, Magnesium phosphate,  $\text{Mg}(\text{H}_2\text{PO}_4)_2$

(absorption by apple leaves)

RN 7664-38-2 HCA  
CN Phosphoric acid (CA INDEX NAME)

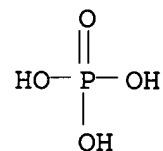


RN 7778-77-0 HCA  
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

RN 13092-66-5 HCA  
CN Phosphoric acid, magnesium salt (2:1) (CA INDEX NAME)



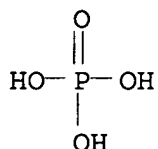
● 1/2 Mg

CC 11D (Biological Chemistry: Botany)  
IT **Fertilizers**  
(magnesium and P, for apple trees)  
IT 142-72-3, Magnesium acetate, Mg(OAc)<sub>2</sub> 7487-88-9, Magnesium sulfate  
**7664-38-2, Phosphoric acid** 7722-76-1,  
Ammonium phosphate, NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> **7778-77-0**, Potassium phosphate,  
KH<sub>2</sub>PO<sub>4</sub> 7786-30-3, Magnesium chloride 10377-60-3, Magnesium nitrate  
**13092-66-5**, Magnesium phosphate, Mg(H<sub>2</sub>PO<sub>4</sub>)<sub>2</sub>  
(absorption by apple leaves)

L47 ANSWER 53 OF 56 HCA COPYRIGHT 2010 ACS on STN  
49:6180 Original Reference No. 49:1289g-i Decomposition of rock phosphate

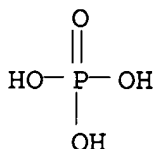
by sodium chloride and water vapor. I. The utilization of aluminous phosphate rock. Hamamoto, Masao Nippon Dojo Hiriyogaku Zasshi, 25, 72-6 (Unavailable) 1954. CODEN: NIDHAX. ISSN: 0029-0610.

- AB A mixt. of NaCl and aluminous phosphate rock from Daito Island was treated with steam at 800°. Most of the P in the rock became sol. in 2% citric acid and some became sol. in water. The product was hygroscopic. Similar treatment of Idaho rock gave a less hygroscopic product contg. no water-sol. P. The mechanism of the reaction appears to be as follows: Above 700°, NaCl and water vapor react to form NaOH which in turn reacts with AlPO<sub>4</sub> and phosphate rock to produce complex Na, Al, and Ca phosphates. A portion of the product is made sol. in 2% citric acid by the addn. of Na<sub>2</sub>O.
- IT 7632-05-5P, Sodium phosphate 10103-46-5P, Calcium phosphate  
(manuf. of, from aluminous phosphate rock)
- RN 7632-05-5 HCA
- CN Phosphoric acid, sodium salt (1:?) (CA INDEX NAME)



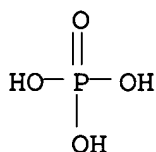
●x Na

- RN 10103-46-5 HCA
- CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

- IT 7664-38-2, Phosphoric acid  
(mixts. of, with NaCl and steam, phosphate-rock decompn. by)
- RN 7664-38-2 HCA
- CN Phosphoric acid (CA INDEX NAME)



- CC 18 (Acids, Alkalies, Salts, and Other Heavy Chemicals)
- IT **Fertilizers**  
**Fertilizers**  
(from aluminous phosphate rock)
- IT Steam  
(mixts. with **H3PO4** and NaCl, phosphate-rock decompn. with)
- IT Phosphates  
(rock, decompn. by **H3PO4**-NaCl-steam mixts.)
- IT **7632-05-5P**, Sodium phosphate **10103-46-5P**, Calcium phosphate  
(manuf. of, from aluminous phosphate rock)
- IT **7664-38-2**, **Phosphoric acid**  
(mixts. of, with NaCl and steam, phosphate-rock decompn. by)

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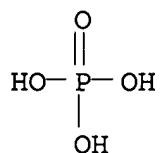
47:63584 Original Reference No. 47:10786h-i Phosphatic **fertilizers** and their relation to soil composition. Bottini, Ettore (Staz. chim.-agrar. sper., Torino, Italy). Annali della Sperimentazione Agraria, 6, 1637-58 (English) 1952. CODEN: ASAGAA. ISSN: 0365-642X.

AB Samples of 15 soils were percolated with 0.1N solns. of K2HPO4, Na2HPO4, CaH4(PO4)2, (NH4)2HPO4, and **H3PO4**. **H3PO4** and CaH4(PO4)2 reduced the rate of percolation, and (NH2)4HPO4 accelerated it, especially when it was slow. The action of the Na and K salts was irregular but generally favorable. The H, Ca, and Na salts were the more readily fixed; but by variable mechanisms, and although insol. in the percolating solns., the P2O5 remained available to plants. The pH of the percolating solns. was little changed by its passage through the soils. Of the solns. tried only the NH4 salt maintained a pH close to neutral and within the range favorable to plant growth.

IT **7558-79-4**, Sodium phosphate, Na2HPO4 **7758-11-4**, Potassium phosphate, K2HPO4 **7758-23-8**, Calcium phosphate, Ca(H2PO4)2  
(effect on soils)

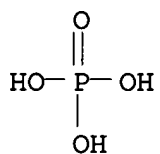
RN 7558-79-4 HCA

CN Phosphoric acid, sodium salt (1:2) (CA INDEX NAME)



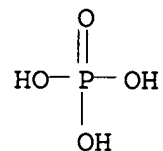
●2 Na

RN 7758-11-4 HCA  
CN Phosphoric acid, potassium salt (1:2) (CA INDEX NAME)



●2 K

RN 7758-23-8 HCA  
CN Phosphoric acid, calcium salt (2:1) (CA INDEX NAME)



●1/2 Ca

CC 15 (Soils and Fertilizers)  
IT Soils  
(phosphatic-fertilizer effect on)  
IT **Fertilizers**  
(phosphorus, soil compn. and)  
IT **7558-79-4**, Sodium phosphate, Na<sub>2</sub>HPO<sub>4</sub> **7758-11-4**,  
Potassium phosphate, K<sub>2</sub>HPO<sub>4</sub> **7758-23-8**, Calcium phosphate,  
Ca(H<sub>2</sub>PO<sub>4</sub>)<sub>2</sub> 7783-28-0, Ammonium phosphate, (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub>  
(effect on soils)

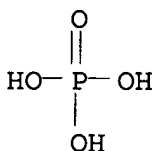
44:50771 Original Reference No. 44:9703e-h Experiments on phosphates used for clarifying cane juice. Chow, T.-Y.; Chang, P. K.; Cheng, C.-P. (Taiwan Sugar Corp., Taipei, Taiwan). Taiwan Sugar, 2(No. 2), 31-43 (Chinese) 1949. CODEN: TWSUA5. ISSN: 0492-1712.

AB Samples of the Ehrmannite and the calcium superphosphate produced by the Taiwan Fertilizer Corporation, the Ehrmannite made in Japan, and the calcium superphosphate made in United States were analyzed and their chem. compns. compared. The extn. of sol. phosphates in these specimens with water was studied. The P<sub>2</sub>O<sub>5</sub>/CaO ratio in the leaching liquor tends to increase when the amt. of water used for leaching a definite weight of sample is decreased. Expts. on the clarification of the mixed juice of Da-ling factory (av. phosphate content 302 p.p.m.) by the addn. of standard KH<sub>2</sub>PO<sub>4</sub> soln. indicate that in the cold liming process, the optimum phosphate content is 400 p.p.m. and the optimum pH value is 7.6, while in the hot liming process the optimum pH value is 7.3. Data are given, showing the different effects of clarification of the mixed juice of Da-ling factory by the addn. of 20 B.acte.e. H<sub>3</sub>PO<sub>4</sub> and different kinds of Ehrmannite and calcium superphosphate.

IT 7778-77-0, Potassium phosphate, KH<sub>2</sub>PO<sub>4</sub> 10103-46-5,  
Calcium phosphate  
(in sugar-juice clarification)

RN 7778-77-0 HCA

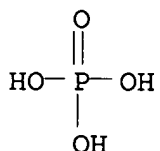
CN Phosphoric acid, potassium salt (1:1) (CA INDEX NAME)



● K

RN 10103-46-5 HCA

CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

CC 28 (Sugars, Starches, and Gums)

IT 7778-77-0, Potassium phosphate, KH<sub>2</sub>PO<sub>4</sub> 10103-46-5,  
Calcium phosphate 12415-25-7, Ehrmannite  
(in sugar-juice clarification)

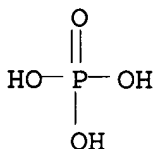
L47 ANSWER 56 OF 56 HCA COPYRIGHT 2010 ACS on STN  
17:15470 Original Reference No. 17:2479i,2480a Soluble phosphates.  
Kawamura, Sen JP 41224 19211222 (Unavailable).  
APPLICATION: JP .

AB 100 parts of powd. Fe or Al phosphate ore are boiled and then evapd.  
to dryness with 11 parts of NaOH, 27 parts of Ca(OH)<sub>2</sub>, and 100-150  
parts of H<sub>2</sub>O. The residue is powdered. By this treatment 77% of the  
total **phosphoric acid** is dissolved in 2% citric  
acid or ammonium citrate. As the product is not hygroscopic, it is  
used for **fertilizer** and material for manuf. of other  
phosphates.

IT 10103-46-5P, Calcium phosphate 16068-46-5P,  
Potassium phosphate  
(manuf. of)

RN 10103-46-5 HCA

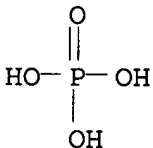
CN Phosphoric acid, calcium salt (1:?) (CA INDEX NAME)



●x Ca

RN 16068-46-5 HCA

CN Phosphoric acid, potassium salt (1:?) (CA INDEX NAME)



●x K

CC 18 (Acids, Alkalies, Salts, and Sundries)

IT 10103-46-5P, Calcium phosphate 10124-31-9P, Ammonium  
phosphate 16068-46-5P, Potassium phosphate  
(manuf. of)